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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

FEBRUARY · 1959

SCRANTON, PA., firemen battle million-dollar blaze in Davidlow Building on December 29. Spread of fire, which destroyed 21 business establishments, was blamed on false ceiling and high wind

IN THIS ISSUE . . .

Plastics—Boon or Bane?

Radiation Hazards of Fire Fighting

Protecting Our American Heritage

A Reuben H · Donnelley Publication

MAXIM *Announces –*

the CAB-FORWARD

ON APPARATUS COMPLETELY NEW – FROM BUMPER TO BUMPER

Here is a completely new fire truck design — performance proven by many hours of pump testing — thousand of miles of road operation under varying temperature and road conditions.

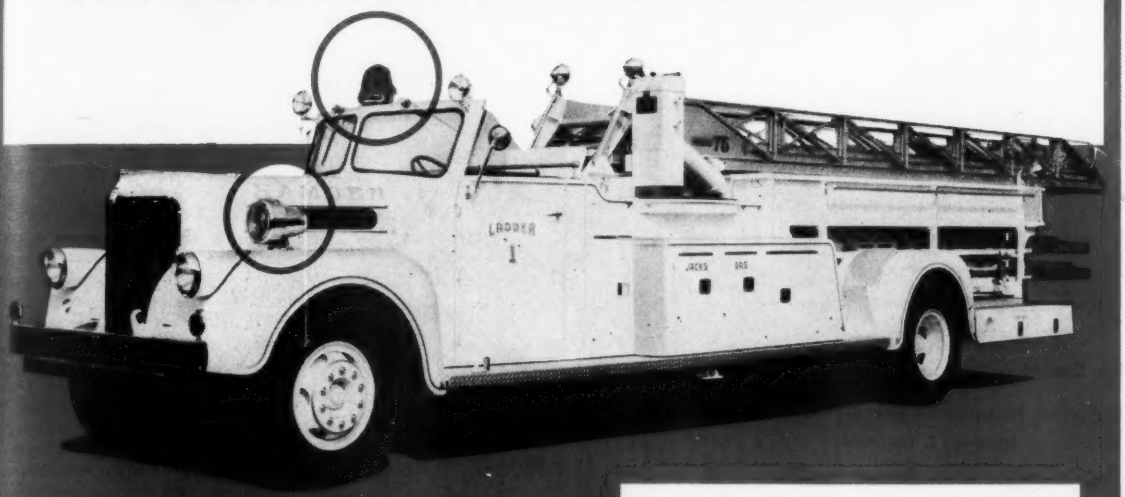
Check—visibility—safety considerations—the ride—steering and the outstanding features of this new fire engine.

PUMPERS 500 TO 1500 GPM - AERIALS 65' TO 100'
MAXIM-MAGIRUS 100'+

Builders Of The World's Finest Motor Fire Apparatus

MAXIM MOTOR COMPANY, MIDDLEBORO, MASS.

FUNCTIONAL PERFECTION



That's what every Chief seeks in his new fire equipment

Model 262-LA-75 Maxim Truck recently delivered to Hamden, Conn. 275 horsepower, with synchro-mesh transmission, and 100 ampere alternator. Carries 200 feet of ground ladders, six pike poles and a full complement of other conventional equipment. Has a 75 foot all steel, all hydraulic aerial ladder with hydraulic ground jacks and ladder pipe. The white finish with gold stripes and blue shading make it a standout in appearance and add to its visibility, while a FEDERAL #17A Beacon Ray and Q-2 siren give it an air of assured dependability.

In a truck it includes motor, chassis, pump, controls, hose, ladders and all accessory fire fighting material. When you have *these* all assembled you still are not ready to roll *UNTIL YOU HAVE PROTECTED IT WITH THE BEST OF VISIBLE AND AUDIBLE WARNINGS.*

FEDERAL Class Q Coaster sirens stand second to none in sound output, quick response and long roll. FEDERAL Beacon Ray Lights really project a visual warning, more effective at great distance, which proves their superiority. Both of these warning signals, like this handsome fire truck, are perfectly functional in design, *and* are pleasing in appearance, in keeping with quality construction.

Don't overlook that last important finishing touch of assurance to protect *your* fire apparatus. *BE SURE TO SPECIFY* a FEDERAL Super Beacon Ray Light and a FEDERAL Q-2 Coaster Siren on *all* equipment.

GET THE BEST TO SAVE THE REST.

Ask for catalog 300 on lights and sirens.

FEDERAL SIGN and SIGNAL Corporation

8702 S. State St., Chicago 19, Ill.

FIRE ENGINEERING

VOL. 112 FEBRUARY, 1959 NO. 2

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Service and Experience

One of the most gratifying and interesting phases of our work is the constant contact we have with people who are in need of assistance. Sometimes their requirements border on the unusual, but we always attempt to satisfy all requests and frequently are surprised by the manner in which results are obtained.

During the past few weeks, for example, we have assisted a naval architect secure necessary information required for preparing specifications relating to a fireboat. In a second instance, a fire protection consultant desired data on special clothing and fire fighting apparatus for sub-zero temperature operations. This was a tough one, but we made several suggestions which helped steer him in the proper direction. In addition, we recently received two foreign fire officials who were interested in analyzing the reaction of American machine operators working in industrial plants which employed nuclear energy for manufacturing purposes. This request also took some doing but we located the people who could satisfy the exact need.

Since these visits we have spent a few moments of reflection on the nature of the requests. We fully realize we don't know all the answers, but from our background of experience in dealing with the fire service, we believe we know where to find them. If we can be of service to you along these lines, just say the word. We will be happy to cooperate!

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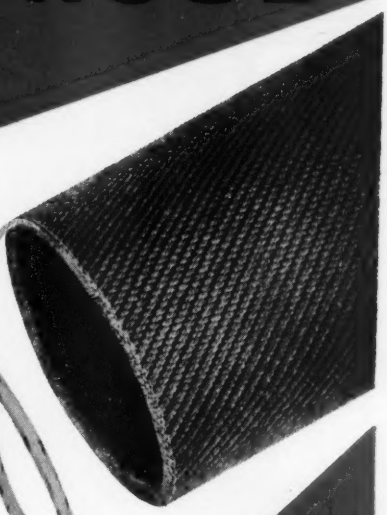
Fabric FIRE HOSE

PRESENTS



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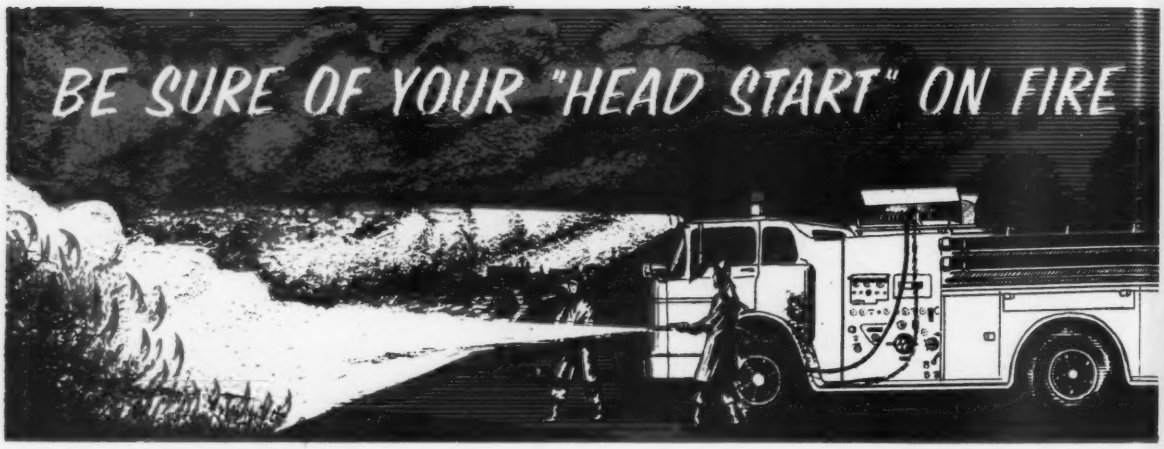
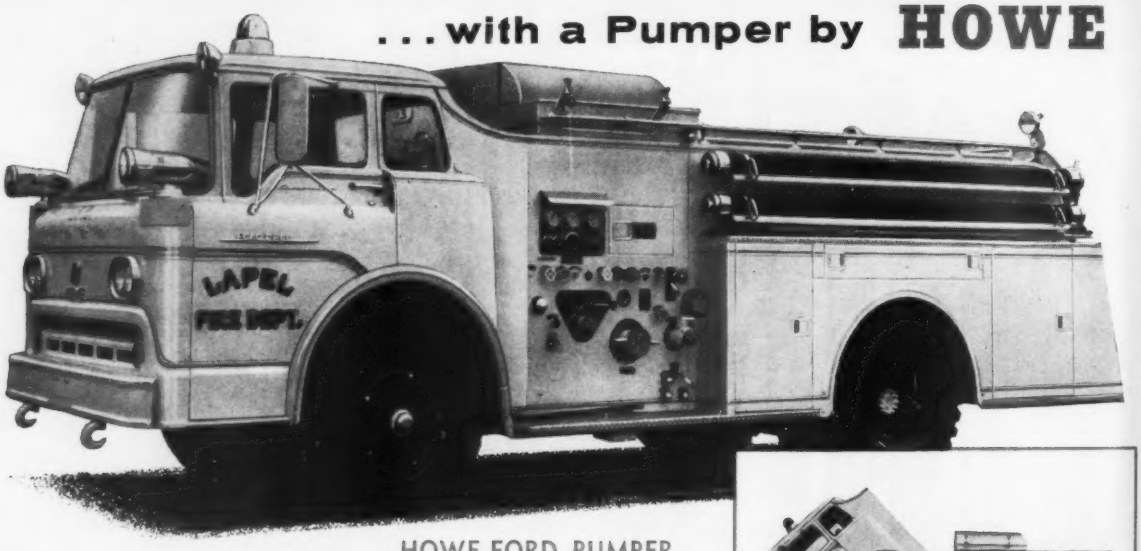


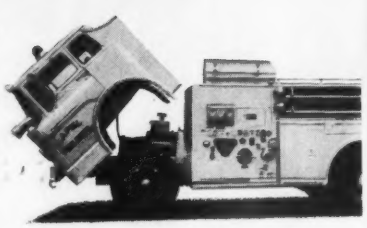
. . . with a Pumper by HOWE



HOWE-FORD PUMPER

The only kind of "head start" you can get on a fire comes from the efficiency of your men and equipment. This HOWE DUAL FIRE FIGHTER is a unit with the efficiency that frees firemen for the fast action that cuts down losses. Main pump is Waterous CM-500 Electro-Matic, completely push button controlled. 4-Stage High Pressure Power Take-Off Pump, 60 GPM at 800 lbs. pressure, is supplied synchronized with the main pump to obtain maximum volume and pressure simultaneously. Pumps may also be used separately at maximum efficiency. 4-Stage Pump can be operated while truck moves fighting grass fires.

Other features are included to increase efficiency and reduce the number of men required to operate the truck. There are eight roomy built-in compartments to house generator, portable pump, masks, nozzles, etc. Heated compartment, protected by sliding steel covers, keeps hose reels, pump and piping from freezing. 1200 feet of 2½" hose carrying capacity. 750 gal. booster tank. Note that famous HOWE cab-to-body streamlining is maintained on the tilt-forward cab. Give your fireman every modern aid with a HOWE unit. Let HOWE build a pumper to fit your needs.



Enclosed forward cab provides exceptional visibility, tilts forward for access to the engine. This design provides maximum loading area for equipment on 135" wheel base and makes short turning radius possible—another advantage for fast action!

HOWE

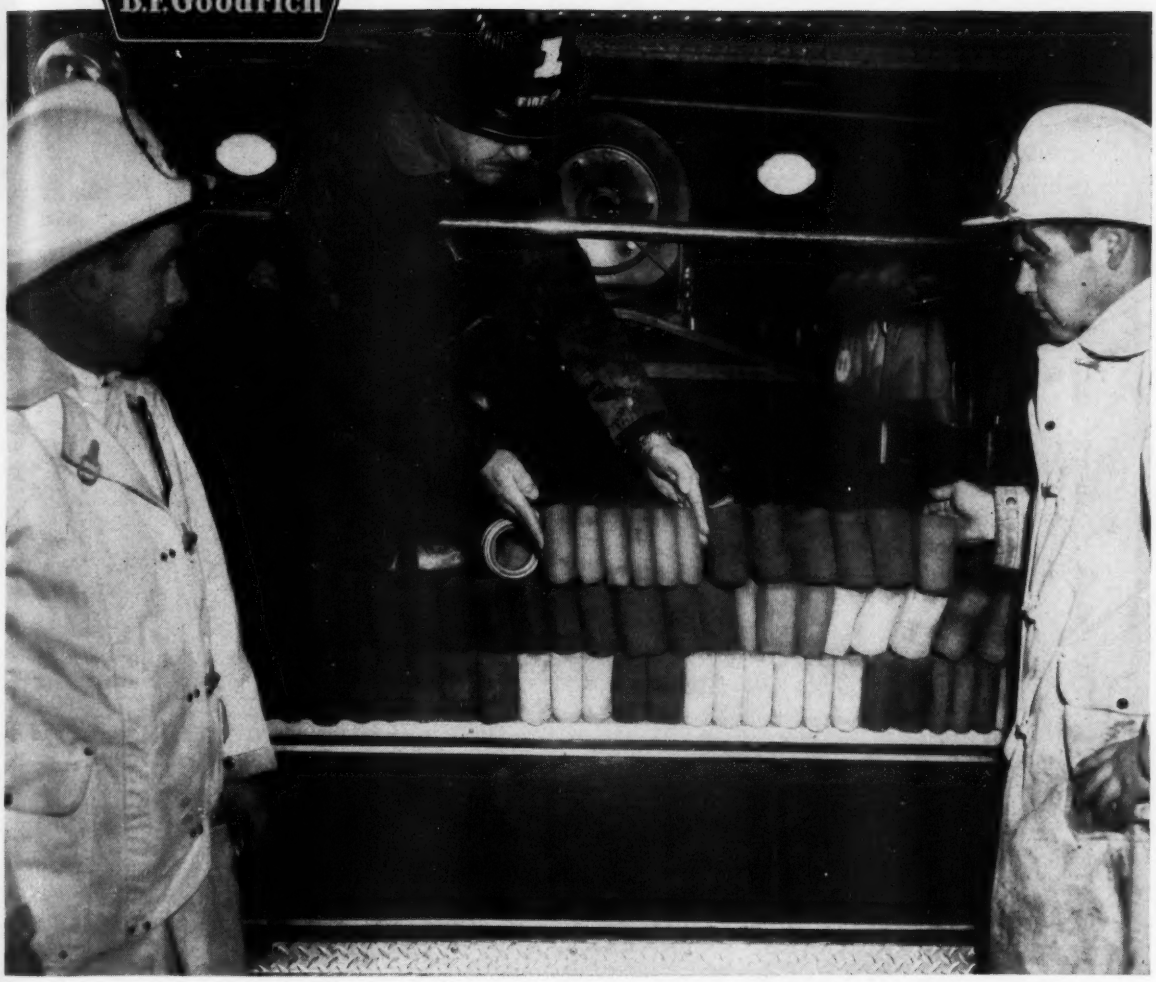
HOWE

"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

Member FAM (Fire Apparatus Manufacturers Association)

Dept. FE-29, 1402 W. 22nd St., Anderson, Indiana, U. S. A.



This hose stows more compactly, is easier-handling under pressure

THAT B.F.Goodrich hose coils tighter than the ordinary hose shown with it because it's lighter, much more flexible. Hundreds of extra feet of hose can be racked on a truck—up to a third more on a standard truck. The chief of this fire department prefers it because it is easier to handle under pressure, saves time at fires.

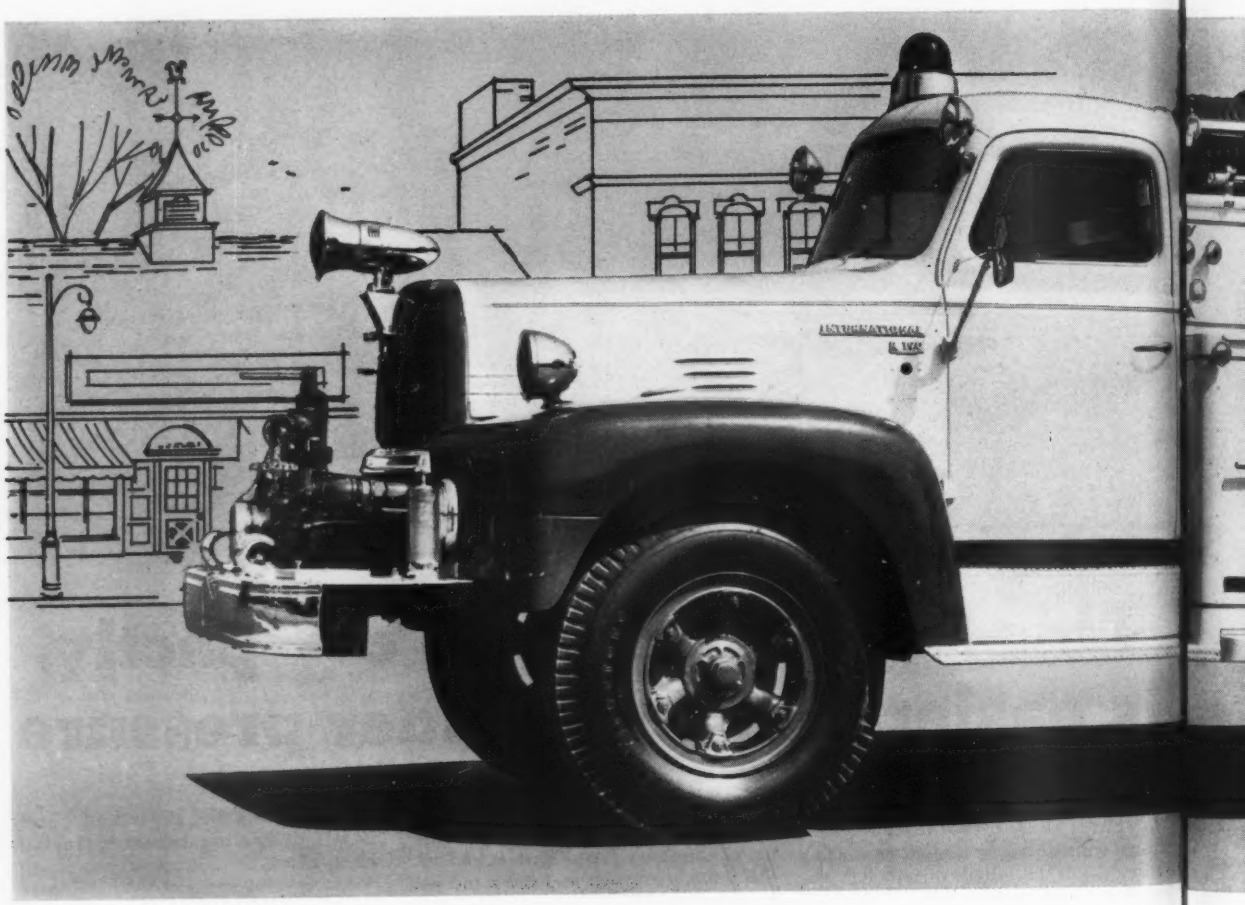
The flexibility and lightness of this hose comes from the Dacron fiber used as "filler" cords which go around the hose and carry the load under pressure. These cords are thinner, yet stronger than cords used for reinforcement on heavier, bulkier hose. It is tested to 600 pounds pressure and can stand up to twice as much pressure without bursting.

For areas where excess moisture is a problem, B.F.Goodrich has developed the exclusive Superseal protection for hose that makes it 10 times more resistant to mildew attack and rotting. Most treatments just coat the surface of the hose, but Superseal penetrates every cord of the inner and outer jacket, preparing the hose for all kinds of weather. Superseal protection costs no more than ordinary hose treatments.

When you want a hose that's light, flexible, and will last longer than any other hose made, get B.F.Goodrich hose with Superseal protection. Your B.F.Goodrich fire hose distributor can tell you more about it, or write *B.F.Goodrich Industrial Products Company, Dept. M-528, Akron 18, Ohio.*

B.F.Goodrich *fire hose*

IT LOOKS
RUGGED
...AND IT I



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Motor Trucks • Crawler Tractors
Construction Equipment • McCormick®
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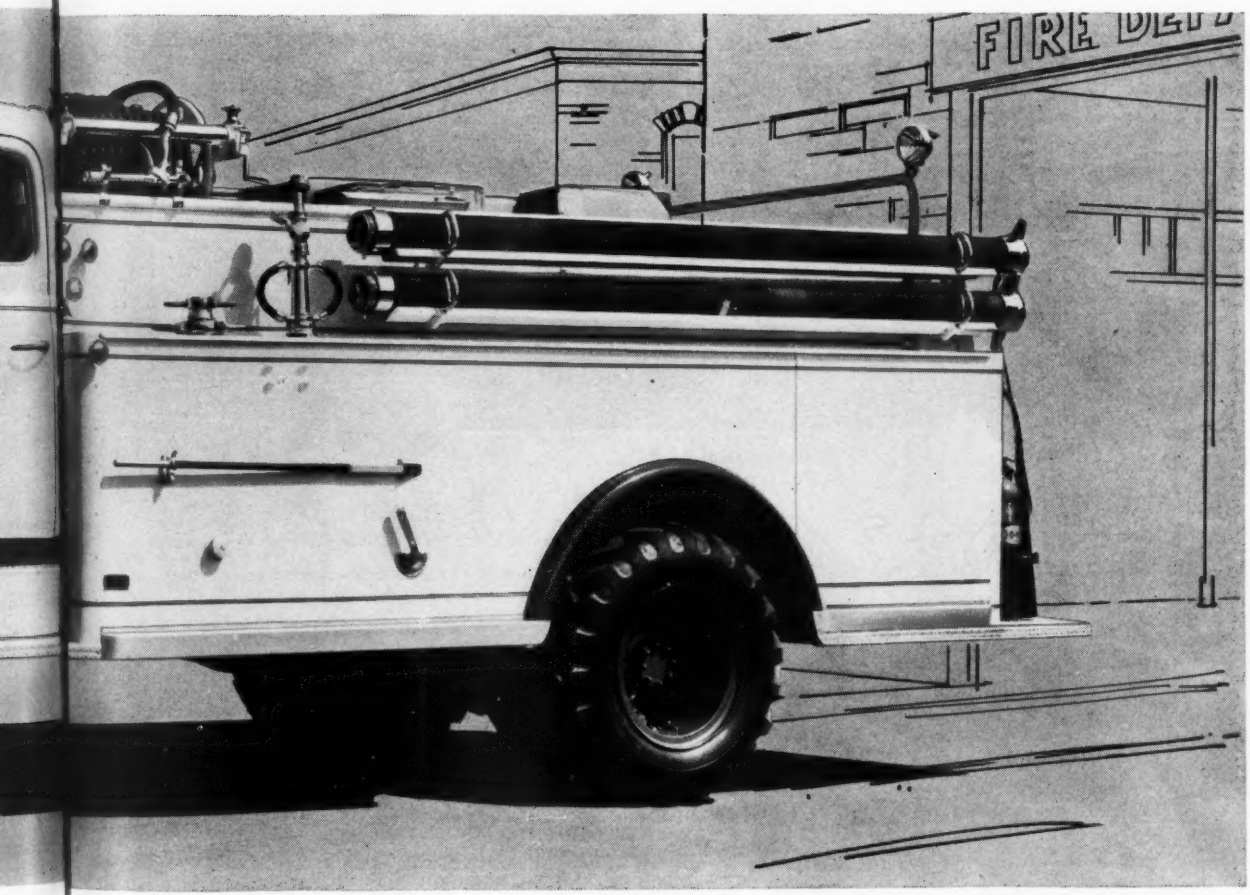
INTERNATIONAL® T

Just one look at the clean, rugged lines of this conventional INTERNATIONAL heavy-duty model will tell you that here is a fire truck chassis that's got it! And its looks aren't deceiving. It has the ability to start fast at the bell, slug hard at the fire . . . and keep at it for a lifetime.

A 12-volt ignition system and positive engagement starter provide "leap-ahead" action at the turn of the key. Husky six-cylinder truck engine options, with up to 501 cu. in. displacements, are power-matched to drivelines to deliver more "go" at the wheels, more pumping stamina at the fire. Honest horsepower ratings assure accurate pumper ratings and maximum water pressure you can count on!

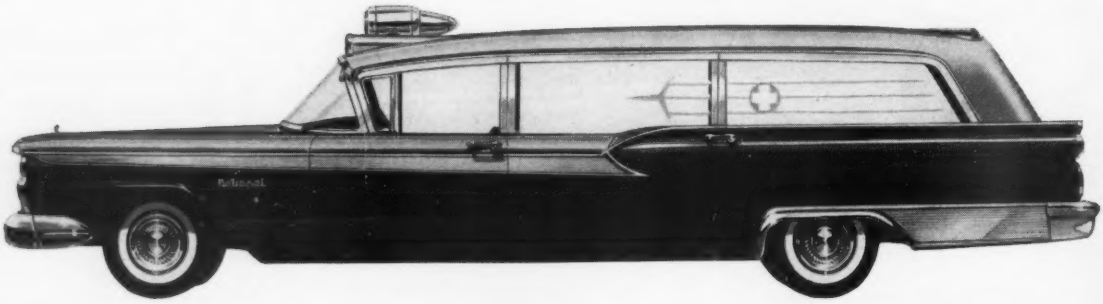
Check the steel reinforced cabs, deep-pressed channel side rails, axle ratings to 11,000 lbs. front and 23,000 lbs. rear. Component by component you'll see why you can get a fire truck chassis that's as rugged as it looks from the world's most complete truck line . . . INTERNATIONAL!



Rugged and ready! You have your choice of three INTERNATIONAL R-Line Fire Truck Chassis, equipped with larger radiators for more efficient cooling in stationary operation. Choice of four standard axle ratios tailor speed and power to exact needs. Self-energizing, self-centering hydraulic brakes work more efficiently and safely. INTERNATIONAL Fire Truck Chassis are available with GVW ratings up to 33,000 lbs.

TRUCKS cost least to own!

always ready...



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It pays to choose National's Minute Man Ambulance . . . always designed to meet your specific needs, always ready to establish leadership in your community through the finest ambulance service.

In its exclusive Minute Man series, National—offering the finest craftsmanship per dollar of investment—provides the perfect combination of beauty and performance, at a sensible price. The Minute Man is available in three famous styles: regular, high headroom, and two-stage roof, on Ford chassis (shown above), Chevrolet, Pontiac, Oldsmobile, plus other leading makes. Get complete details about the National Minute Man Ambulance . . . contact your local auto dealer or write, without obligation, to National Coaches, Inc., Knightstown, Indiana, Phone 5-4535, 5-4595.

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INDIAN

FIRE PUMPS

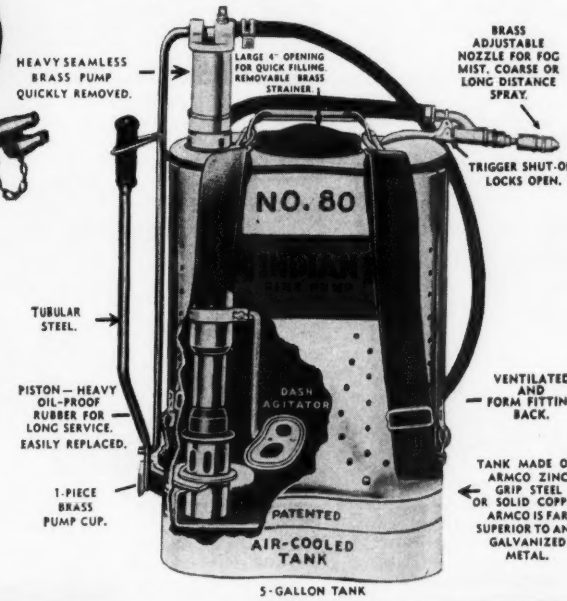
get "HEAP BIG RESULTS" from little water!

Fire fighting authorities who have experimented with a "WET WATER" powder mixed with the water in an **INDIAN FIRE PUMP** tank report it does an excellent job.

Grass, rubbish, brush, roof or spot fires may occur any time. Don't let these aggravating small fires send you on the warpath. Whoop up your fire fighting with INDIAN FIRE PUMPS!

Versatile, rugged, dependable INDIAN FIRE PUMPS have been the fireman's best friend for many, many years. They carry Underwriters' Laboratories approval. Spare parts are always available.

INDIANS provide the *most* fire protection for the *least* cost!


HEAVY SEAMLESS BRASS PUMP QUICKLY REMOVED.
LARGE 4" OPENING FOR QUICK FILLING. REMOVABLE BRASS STRAINER
BRASS ADJUSTABLE NOZZLE FOR FOG MIST, COARSE OR LONG DISTANCE SPRAY.
TRIGGER SHUT-OFF LOCKS OPEN.
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TUBULAR STEEL.
PISTON — HEAVY OIL-PROOF RUBBER FOR LONG SERVICE. EASILY REPLACED.
DASH AGITATOR
VENTILATED AND FORM FITTING BACK.
TANK MADE OF ARMCO ZINC GRIP STEEL OR SOLID COPPER. ARMCO IS FAR SUPERIOR TO ANY GALVANIZED METAL.
1-PIECE BRASS PUMP CUP.
PATENTED
AIR-COOLED TANK

5-GALLON TANK

No. 80 INDIAN

(Lever Type Pump and Handle)

Heavy steel pump lever. Ventilated tank. 5 gal. capacity. Continuous high pressure. Armco zinc-grip steel or glistening solid brass tank. Strongest construction throughout. Has no equal.

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(SLIDING PUMP TYPE)

Form fitting, ventilated tank permits constant circulation of air between tank and carrier's back. No dampness. Leaves arms free for climbing ladders, etc. Highly popular for many years.

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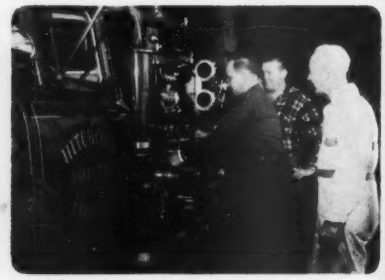
A FIRE CHIEF GOES TO SCHOOL

Typical of the thousands of fire chiefs and crewmen that each year attend the John Bean Fire School, Chief A. G. Terrabonne of Hitchcock, Texas is seen here as he completes his course with a group of fellow firemen from all parts of the country. Chief Terrabonne knows that keeping abreast of modern fire-fighting methods, like the John Bean High-Pressure Fog System, is the surest way to guarantee his community the safety and protection with which he is entrusted. That's why this free training by John Bean fire-fighting experts is available the year 'round to you and your men as a part of the regular service that goes with every John Bean truck. Put yourself in Chief Terrabonne's place as he is seen below in some of the many stages of his own training.

ADVANCED FEATURES of the John Bean Firefighters are first learned in the classroom, where Chief Terrabonne and his group study the proper function and operation of the equipment they will soon be using.

FIRST-HAND EXPERIENCE is an important part of each fireman's training at John Bean. Here Chief Terrabonne learns the proper care and maintenance of his new equipment by actually doing the work himself under expert supervision.



GETTING THE FEEL OF IT! Following a day in the classroom, Chief Terrabonne and one of his crewmen, Cecil Cruse, receive individual training from factory specialists on the operation of their own equipment.

LIVE FIRE FIGHTING of both Class 1 and Class 2 fires is practiced by each student at the John Bean proving grounds. Here, Chief Terrabonne quickly knocks out a building fire with John Bean High-Pressure Fog.

BURNING OIL TANK . . . . one of the most difficult of all fires to combat . . . is easily and quickly put out by members of Chief Terrabonne's group with the triple action of John Bean High-Pressure Fog.

18 GALLONS OF WATER—18 SECONDS LATER . . . and the raging fire in this 18 x 36 foot oil pit is completely extinguished! Dramatic proof of what John Bean High-Pressure Fog can do when the going is rough.

BETTER EQUIPPED — BETTER TRAINED! As Chief Terrabonne and Cecil Cruse take delivery of their new truck and return to Hitchcock, Texas, the people there can well be thankful. For with them they bring the confidence and skill to give their community the hard-hitting, split-second protection for which John Bean is known the world over.

See your John BEAN representative, or write today to arrange for a High Pressure Fog Fire Fighter demonstration

JOHN fmc BEAN

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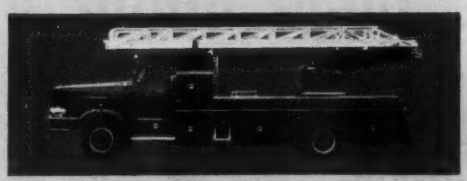
FIRE LINE . . .

FWD is celebrating its "50 years of vehicle ideas" with a completely new fire apparatus line—the Golden Fire Line. Completely new engineering and the finest new styling. It's an "idea" line . . . the best protection any community can have!

50 years of vehicle ideas FWD

3 WAYS NEW! New cab-forward styling is the most modern in the industry. New rear drive models bring famous FWD protection to any department, regardless of budget. FWD's proven *four* wheel drive control is available for those who want the finest in safety and guaranteed "get-there" traction. The FWD Golden Fire Line has 34 pumpers—500, 750, 1000 and 1250 G.P.M. —and 16 aerials. From the chassis to the pump, the same FWD built-in reserves have been molded into the finest fire apparatus line 50 years of experience could conceive!

New junior aerials are available on FWD pumper chassis in addition to FWD-Geesink aerials. Full hydraulically operated, all are furnished on short wheel-base chassis, with all-metal ladders in 55', 65', 85' and 107' lengths. No need for extra long storage space with these pumper sized aerial units.

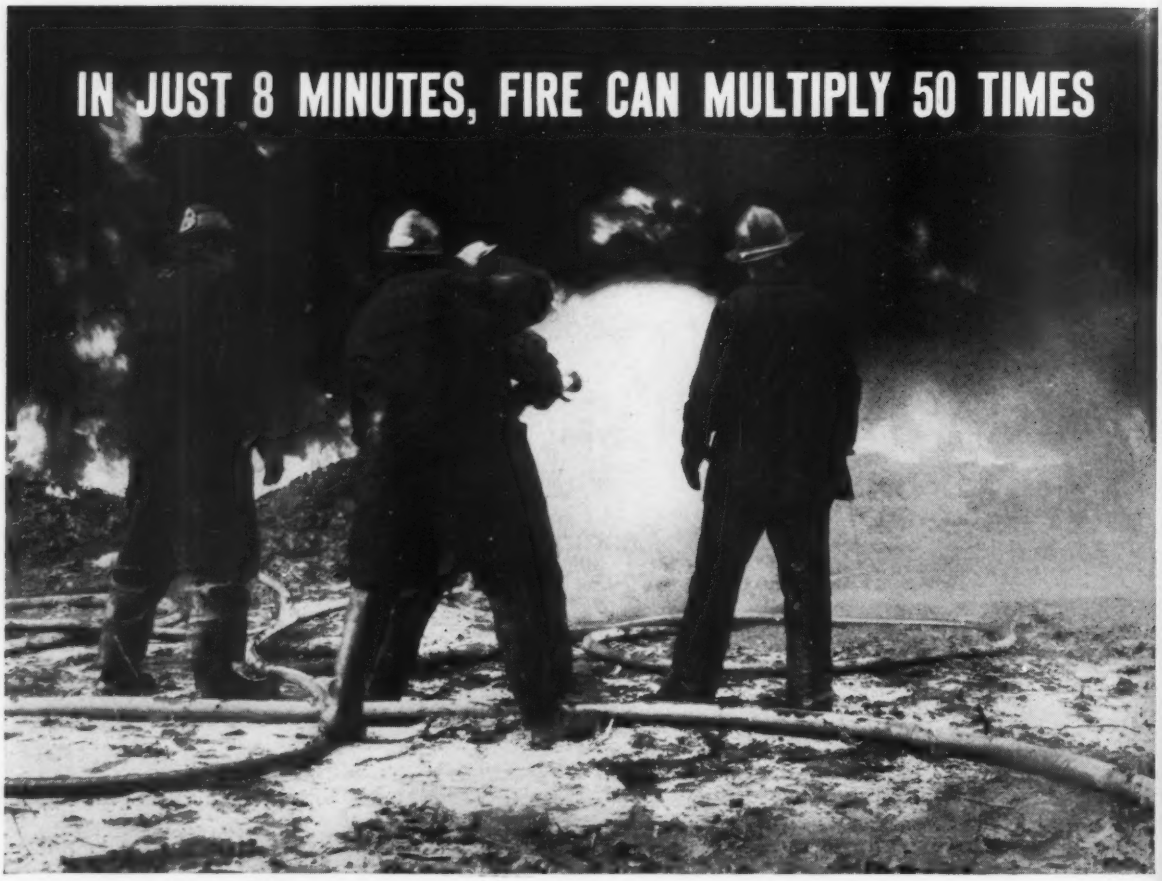


BUILDERS OF AMERICA'S FINEST AND SAFEST FIRE APPARATUS

FWD CORPORATION

CLINTONVILLE, WISCONSIN

CANADIAN FACTORY • KITCHENER, ONTARIO



Save vital seconds with lightweight hose made with DACRON®

POLYESTER FIBER

MORE COMPACT—up to 500 extra feet of hose made with Du Pont DACRON fits into standard truck beds.

EASIER TO HANDLE—hose made with DACRON saves seconds when seconds count, loads quickly after fire.

Seconds often spell the difference between controlling a fire and disaster. That's why hose containing filler cords of Du Pont DACRON* polyester fiber is essential to modern fire-fighting efficiency. Hose containing DACRON has unusual strength, yet is lighter than ordinary hose. It has great flexibility and is easier to handle—gets into action fast. Make sure the hose you buy is made with Du Pont DACRON. Hose made with DACRON is produced by all hose manufacturers. E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Department, Wilmington 98, Delaware.

Enjoy the "Du Pont Show of the Month" on CBS-TV

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*"Dacron" is Du Pont's registered trademark for its polyester fiber.

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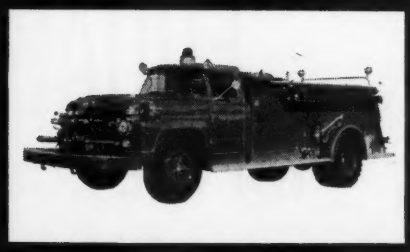
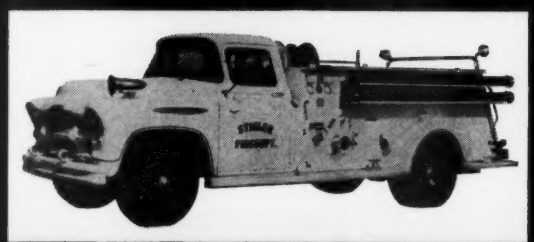
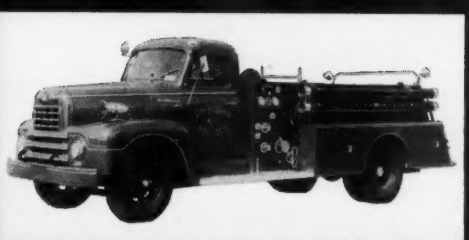
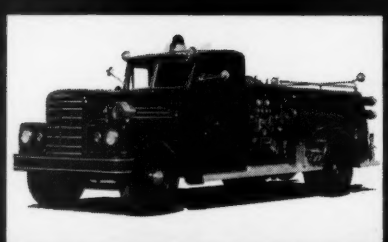
FIRE HOSE MADE WITH "DACRON" is easier to handle . . .
gives improved performance . . . packs more compactly.

BOARDMAN BUILDS BETTER PUMPERS for Less!









THE BEST PUMPER your community can possibly have is the pumper that fits its needs *exactly*. And Boardman pumpers are built to do just that, with the features and equipment you need. They are mounted on the standard chassis of your choice, for quick and inexpensive local service and maintenance! Boardman pumpers are built to your specifications — but for less than a "custom-built" price. WRITE AT ONCE for your copy of the new brochure, "BOARDMAN FIRE FIGHTERS."

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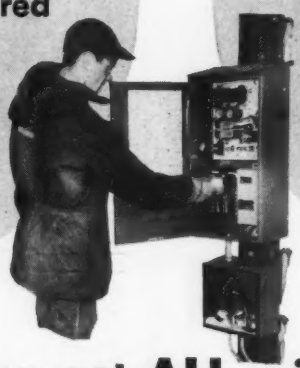
OKLAHOMA CITY

EQUALLY ESSENTIAL

for RELIABLE PROTECTION

against FIRE, BURGLARY and OTHER HAZARDS

AUTOMATIC ALARM SYSTEMS scientifically engineered, skillfully manufactured and expertly installed



Regular inspections, tests and complete maintenance by specially trained technicians

...and you get ALL with ADT

When you install a protective system, it must be kept in perfect operating condition at all times. Even though your fire or burglar alarm equipment is well designed, carefully manufactured and properly installed, it can be no better than the attention and care it receives.

Every ADT Protection System receives regular, specialized attention to assure that it is constantly in readiness to operate in emergency. The value of such maintenance measures is evident in the enviable record of *service* supplied year after year to over 65,000 commercial and industrial establishments and other properties in approximately 2,000 municipalities from coast to coast, and to highly important security systems used by more than 30 Government agencies in upward of 300 locations.

Only ADT has the extensive facilities, trained personnel and years of experience to give your property, profits and employees' jobs the security they deserve.

The following ADT Automatic Protection Services can be combined to give you better protection *at lower cost.*

SPRINKLER SUPERVISORY AND WATER-FLOW ALARM SERVICE — for sprinklered properties.

AUTOMATIC FIRE DETECTION AND ALARM SERVICE—for unsprinklered properties.

PREMISES BURGLAR ALARM—for doors, windows, walls, ceilings and other points of entry.

TELAPPROACH — for safes.

PHONETALARM — for vaults.

HEATING AND INDUSTRIAL PROCESS SUPERVISION.

ADT

AN ADT SPECIALIST WILL EXPLAIN HOW THESE SERVICES CAN BE APPLIED TO PROTECT YOUR PROPERTY **MORE EFFECTIVELY.** CALL OUR LOCAL SALES OFFICE OR WRITE TO OUR EXECUTIVE OFFICE.

Controlled Companies of

AMERICAN DISTRICT TELEGRAPH COMPANY

A NATIONWIDE ORGANIZATION

Executive Office: 155 Sixth Avenue, New York 13, N. Y.

LOOK CLOSE!
100% Dacron Strips over total outer jacket fold area
Dacron filler cords
Long staple cotton
Easy fold construction
Acid resistant rubber compound

see how patented SUPER FYR-STRYPE *reduces hose wear 90%*

Notice the pure Dacron* strips over the total outer jacket fold areas! These two strips of built-in Dacron are Super Fyr-Strype's exclusive feature, now U.S. patented.** They protect the highly vulnerable points where 90% of wear occurs on standard cotton jacket hose. The tough Dacron reinforcing strips are practically immune to wear . . . ruggedly resist abrasion . . . strengthen key points to permit higher test pressure. Dacron is non-absorbent, so hose dries quickly at folds and creases, without mildewing.

And look what's underneath! Both outer and inner jackets are reinforced with Dacron filler cord. Again here's built-in extra endurance and resiliency, plus high resistance to mildew, chemicals and water absorption. Super Fyr-Strype is 15% lighter and 50% stronger than conventional hose, and Dacron gives it peak flexibility for faster unloading, easier, more compact racking! This double jacket, 600 lb. test hose is available in 50 ft. lengths, either 1½″ or 2″ diameter. Write today for complete information!

**DuPont's trade-mark for its polyester fiber. **No. 2,833,313*

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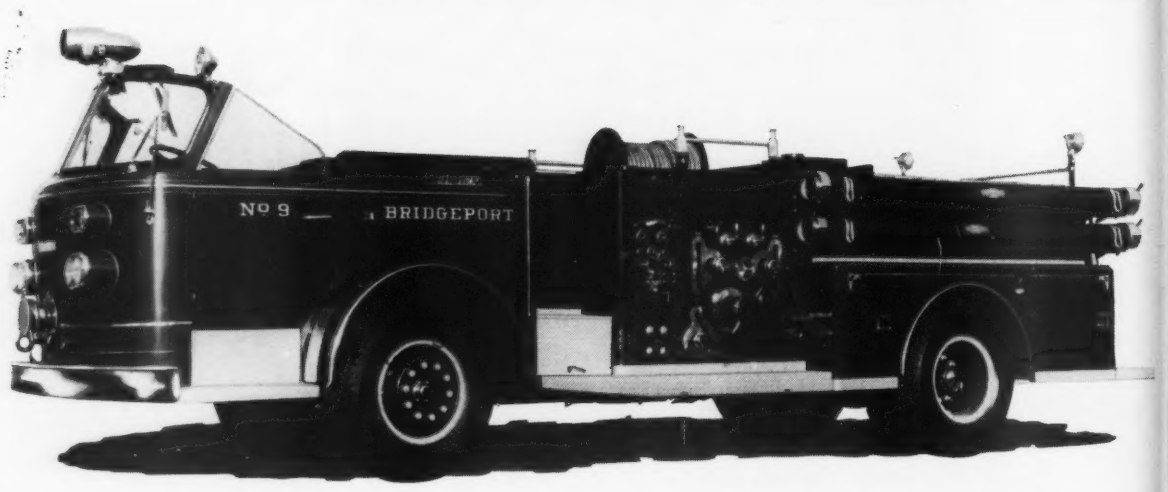
Repeat Customers

. . . a tradition with AMERICAN LaFRANCE



• New 900 Series Model Spartan (1000 g.p.m.) — another repeat order from Bridgeport, Connecticut

The best recommendation for any equipment is the customer who re-orders again . . . and again. American LaFrance is proud that so many cities and fire departments consistently re-order American LaFrance units.

Shown below, for example, is a *partial* listing of cities and fire departments which have re-ordered Cab-forward American LaFrance Pumpers. (Does *not* include pumpers sold to industrial companies, or quads, or aerial ladder trucks.) The extra values in American LaFrance Fire Engines have fully justified their original selection for excellent performance and reliable service.

Space limitation makes it impossible to show *all* the fire departments. The complete list (numbering more than 400) is available on request.

Albany, New York
Alexandria, Virginia
Altoona, Pennsylvania
Anchorage, Alaska
Arlington County, Virginia
Augusta, Georgia
Aurora, Illinois
Baltimore County, Maryland
Baton Rouge, Louisiana
Bay City, Michigan
Beatrice, Nebraska
Belen, New Mexico
Binghamton, New York
Boulder, Colorado
Bridgeport, Connecticut
Camden, New Jersey
Charlotte, North Carolina
Cleveland, Ohio
Cleveland Heights, Ohio
Clovis, New Mexico
Colorado, Springs, Colorado
Columbus, Mississippi
Danvers, Massachusetts
Denver, Colorado
Ely, Minnesota
Evansville, Indiana
Fairbanks, Alaska
Fairmont, West Virginia
Fargo, North Dakota
Flint, Michigan
Fort Lauderdale, Florida
Fort Madison, Iowa
Franklin Township, Ohio
Gainesville, Georgia
Gary, Indiana
Glen Echo, Maryland
Grand Prairie, Texas
Grand Rapids, Michigan
Greensboro, North Carolina
Greenville, South Carolina
Hartford, Connecticut
Huntsville, Alabama
Hutchinson, Kansas
Jackson, Mississippi
Jacksonville, Florida
Johnstown, Pennsylvania
Kansas City, Missouri
Lincoln, Nebraska
Little Rock, Arkansas
Mandan, North Dakota
Miami, Florida
Mobile, Alabama
Montgomery, Alabama
Montpelier, Vermont
Newark, Delaware
Newport, Vermont
Newton, Massachusetts
Norfolk, Virginia
Odessa, Texas
Omaha, Nebraska
Pittsburgh, Pennsylvania
Plymouth, Michigan
Portland, Maine
Portsmouth, Virginia
Poughkeepsie, New York
Providence, Rhode Island
Reno, Nevada
Roseburg, Oregon
Roswell, New Mexico
Saginaw, Michigan
St. Louis, Missouri
San Francisco, California
Sante Fe, New Mexico
Shaker Heights, Ohio
Sioux Falls, South Dakota
Smyrna, Delaware
Somerville, Massachusetts
Spokane, Washington
Springfield, Illinois
Springfield, Missouri
Stillwater, Oklahoma
Syracuse, New York
Topeka, Kansas
Tulsa, Oklahoma
Waterloo, Iowa
Waterville, Maine
White Plains, New York
Wichita, Kansas
York, Pennsylvania
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ELMIRA, N.Y., U.S.A.
LaFRANCE FIRE ENGINE AND FOAMITE LIMITED
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WORK CLOSE IN...

SAFELY! with reflective-protective gear that turns away radiant heat

How many times have *you* been stalled—turned away by intense heat? How many times have you *known* that you could knock out a fire fast if you could only move a line in really close—or get right to the source with a chemical tank?

All these are times when you could have used special bunker clothing—hood, gloves, coat, or complete suit—made of "Scotch•shield" Brand Aluminized Fabric. This is the amazing material that *reflects 90% of radiant heat*—doesn't absorb it. It's light weight and extremely flexible. Rescue clothing made of this reflective-protective material can be put on quickly and you can move around easily . . . get the job done fast and efficiently . . . not always possible in conventional rescue gear.

Every second you spend at a fire is tough, dangerous work. Cut this time short by working in close with equipment made of "Scotch•shield" Aluminized Fabric. It's the same type of reflective-protective material made by "3M" that's used by many modern city and industrial fire departments and now in use by the USAF.

Send the coupon for free, informative booklet, "When It Takes More Than Courage."

SCOTCH•SHIELD
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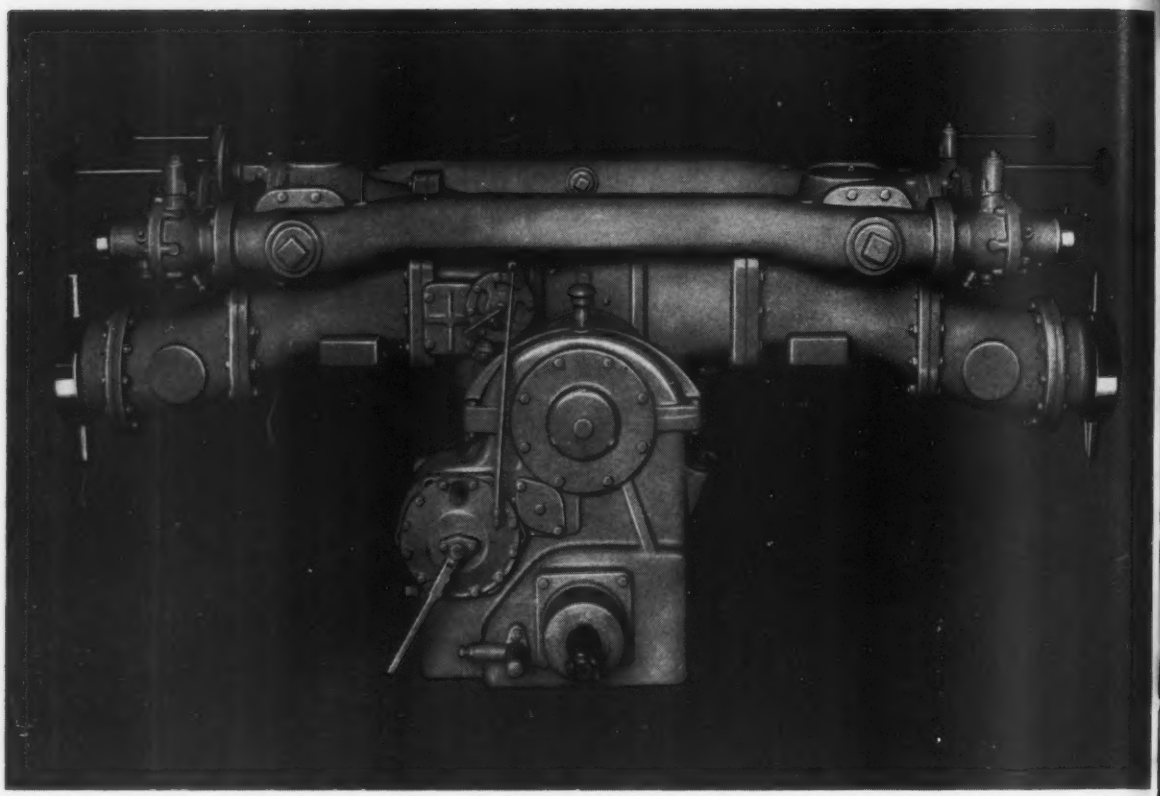
Please send free booklet about "Scotch•shield" Aluminized Fabric, "When It Takes More Than Courage."

Name_____ Title_____

Fire Dept. or Firm_____

Address_____

City_____ Zone_____ State_____



ON THE NEW HALE TYPE Q PUMPS

These Plus benefits give you additional ease and speed of operation with greater dependability.

- The New Hale "Q" Series two-stage pumps, when correctly powered, substantially exceed the Underwriters' Class A ratings. (1000—1250—1500 GPM at 150 P.S.I.)
- Series-Parallel operation affords Wide Pressure-and-Volume Range.
- Simplicity of Design with Large, Smooth Waterways.
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- Designed for MODERN High-Powered Engines.
- Manually Operated Transfer Valve. Power operation available, if desired.
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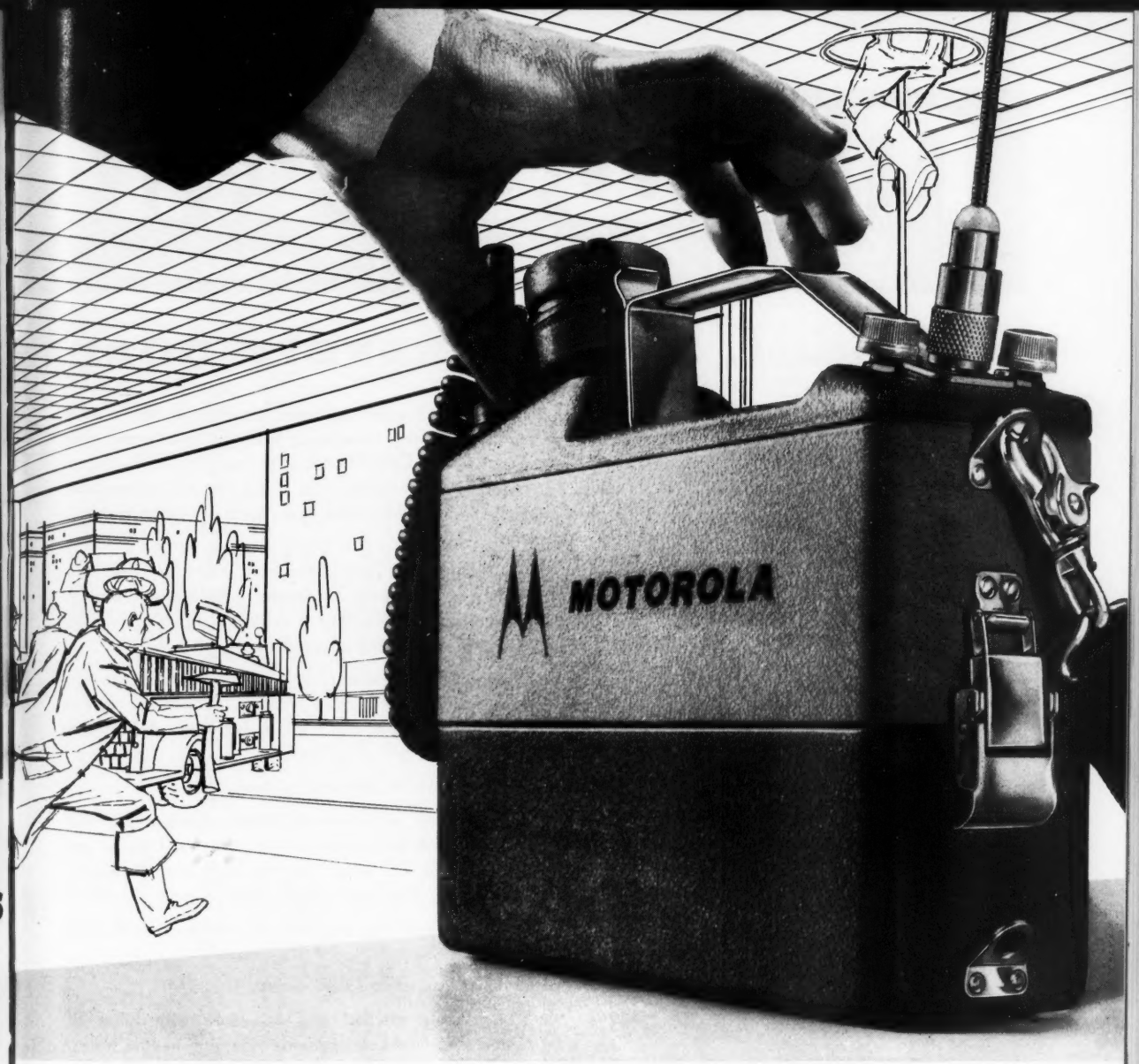
WRITE TODAY FOR NEW BULLETIN No. 367 . . . . . .

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PENNSYLVANIA



Be sure to take it with you...
YOU'LL NEED IT!

The instant you arrive, you're fighting for *control* . . . and those *first few minutes are critical!* Your Motorola "Handie-Talkie" portable radios will help you get reports from every trouble spot . . . and relay instructions in *seconds.* You are in constant contact with all members of your fire fighting team.

For faster fire fighting, make sure that you have *enough* "Handie-Talkie" portables. Transistors, plated chassis and other improvements increase reliability . . . make this the smallest, lightest portable 2-way radio available. You also benefit from the long battery life and obsolescence-free design. And only Motorola can offer you a portable radio with a full 8 watts output. One of the 43 "Handie-Talkie" radios is ideal for your needs. Write for complete literature today.

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MIDWESTERN

Safety Clothing for Firemen

The Original STRIPED SAFETY COAT

. . . was introduced 17 years ago and has been a leader ever since its introduction. There have been many imitations and substitutes offered but the ORIGINAL with the YELLOW stripes rubberized into the black rubber has stood the test against the makeshift models where the stripes are glued, sewed or painted on the material.

Protection, Comfort and Service are built into every detail of this coat. Many lives have been saved and accidents avoided in departments where the ORIGINAL MIDWESTERN SAFETY COAT is specified as standard equipment.

COLLAR — Close fitting around neck, up or down. Keeps out water and sparks. Rubberized outside, corduroy inside, cemented firmly so water can't lodge between. Adjustable strap fastener.

BODY — Only 2 pieces — one middle back seam.

SLEEVES — New style with vertical seams. Originated and designed by Midwestern for use in fire garments. Easy to get into fast. Won't tear out when carrying hose or other equipment on shoulder. Flexible, elastic inner sleeve for wrist.

STORM FLAP — 6-inch flap on front of coat keeps out cold and water.

SNAPS — 5 new Midwestern safety snaps.

SEAMS — All double stitched and cemented with layer of rubber cement. No water can penetrate through needle holes. Reinforced with rivets in all places subject to extra strain.

POCKETS — One extra large inside pocket, regular.

COMBINATION SAFETY SUIT

The Midwestern Rubberized Coat and Bunker Pants make it easy for firemen to keep both warm and dry even in the most severe weather. Close fitting collar and elastic inner sleeve keep out sparks and water. Detachable wool lining. Pants have double-stitched seams, reinforcing rivets at points of strain, large roomy pocket space.

See your MIDWESTERN dealer or WRITE for Free Catalog and fabric samples

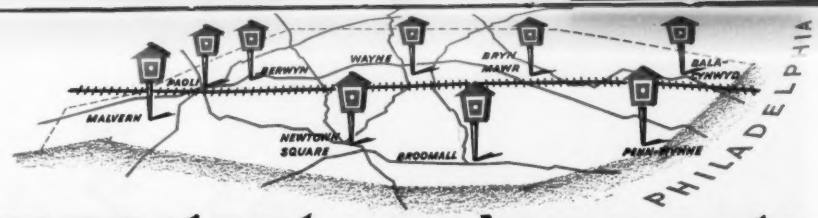
NONE GENUINE WITHOUT THIS TRADE

MIDWESTERN SAFETY MFG. CO., Mackinaw, Ill.

Located in the heart of the Greater Peoria Manufacturing Area

Manufacturers of the Famous MACKINAW Safety Coat

Right out Philadelphia's Main Line



MACKS handle the important assignments

From Bala Cynwyd to Malvern—right out Philadelphia's "Main Line"—whenever the alarm hits, Macks roar into action. For there are nineteen Mack apparatus among the area's fire companies.

There's one compelling reason why this historic, influential territory relies so heavily on Macks. That reason is performance . . . matchless performance based on Mack's supreme, custom-built quality.

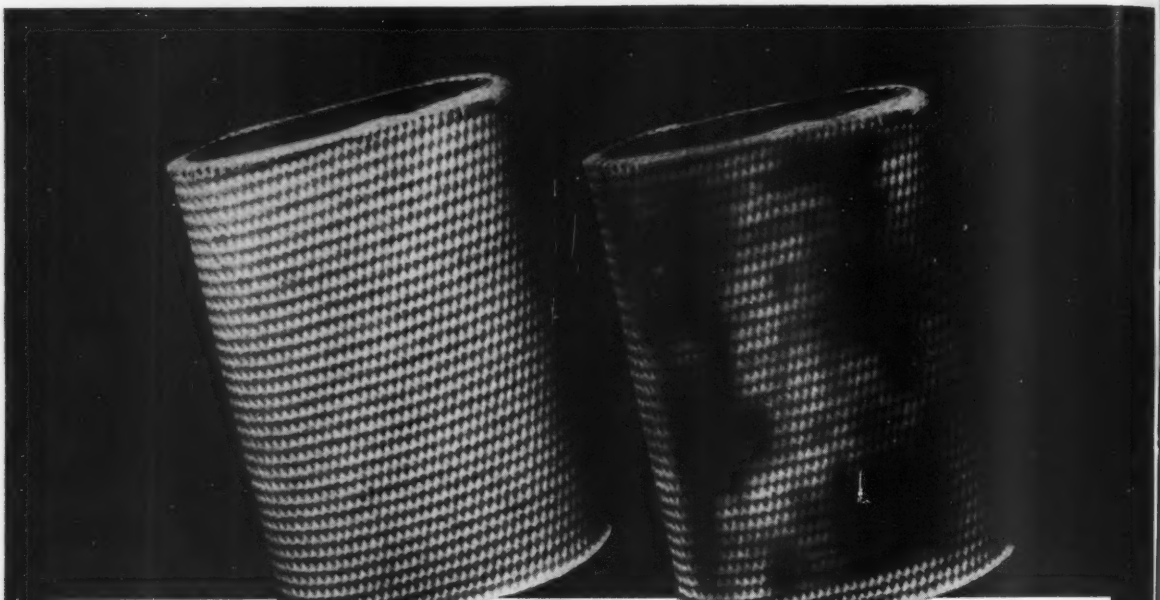
There are custom-built Macks for your department, as well. From the wide selection of Mack models you can have cab-forward or standard units . . . semi-cabs or canopy-cabs . . . conventional or automatic transmissions . . . standard two-stage pumps or the new Uni-Control Hi-Stage pump . . . tractor-drawn or unitized aerials . . . the built-in extras you need.

Moreover, Mack controls the performance of its finished vehicles by making more of its own components than anyone else in the industry, and to the highest standards anywhere. Mack Fire Apparatus, Sidney, Ohio. In Canada: Mack Trucks of Canada, Ltd.

MACK
FIRST NAME FOR
FIRE APPARATUS

BRYN MAWR MODERNIZES WITH MACKS. Latest Mack to join the "Main Line" companies is this 1000 gpm, semi-cab, cab-forward pumper. 276 hp Mack Thermodyne® engine. 300-gallon booster tank. Air brakes and non-spin rear axle. 5" front suction line. 100 amp. Leece-Neville alternator. Like companies everywhere, Bryn Mawr has found that it can have the finest custom-built apparatus in the world at competitive prices—averaged over the life of the equipment.

COMPLETE LINE OF PUMPERS—500 TO 1250 GPM • SQUAD AND HOSE WAGONS • AERIALS 65′ TO 100′ • COMBINATION LADDER TRUCKS



WHAT MAKES THE DIFFERENCE IN THESE TWO?

Provar treatment! That's the difference.

Saturated with water, both samples were exposed to moist atmosphere, under conditions favorable to growth of mildew . . . *for six months, day and night.* The unretouched photos dramatize the effectiveness of the treatment.

Provar is an exclusive process developed by Republic Rubber for prevention of mildew and rot on Fire Hose. The six-month test confirmed the many, many service records that Provar treatment will not wash out or lose its effectiveness.

Illustrated below—the four fine grades of Municipal Fire Hose made by Republic Rubber. All are supplied with Provar protection against mildew and rot.

GOOD FIRE HOSE BY REPUBLIC RUBBER

CHAMPION—Dacron filler, test pressure of 600 lbs. Best grade Fire Hose made.

TOWER — Dacron filler, test pressure of 400 lbs.

CHARIOT — Cotton yarn, test pressure of 400 lbs.

TARGET—Cotton yarn, made to meet demand for heavy-duty hose at moderate cost.

REPUBLIC RUBBER DIVISION

LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN 1, OHIO

INDUSTRIAL RUBBER PRODUCTS

Another proud department
"orders American" again!

Why do so many American Fire Truck owners re-order again and again?

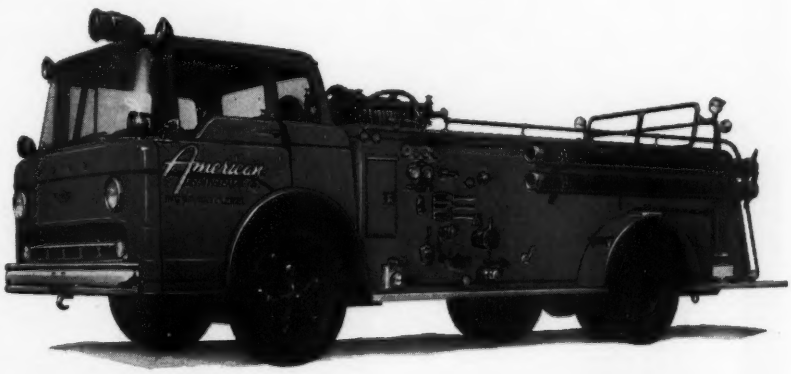
You'll find that satisfaction begins with your initial order at American, because you'll get superior hand workmanship and better engineered features . . . *even though you don't specify them at the time of purchase!*

Of course, you can also select the make and model of commercial chassis you want. Then you choose a dependable multi-stage midship or front-mounted Barton-American Pump — in the model that suits your needs. You enjoy the advantage of specifying many other field-proven and exclusive American features.

And when your truck is delivered, you'll be proud to show your community the superb craftsmanship and better engineering that enable you to fight fires most effectively.

Give your expanding department all the performance and dependability of an American Fire Truck. Once you do, we're confident you'll join the other owners who re-order *again* and *again* . . . because they were highly pleased and satisfied with their first American truck!

Choose either midship or front-mounted pumps — latest body styles and features.

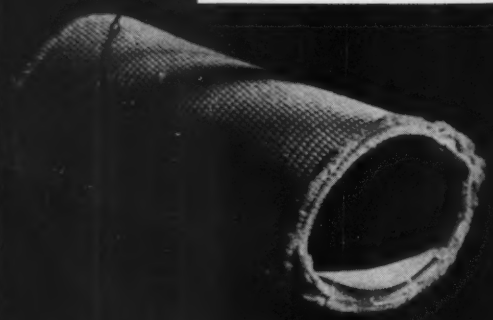


Contact your nearest American representative for full details.

American
FIRE APPARATUS CO.

Main Office: Main Street Rd., Battle Creek, Mich. Plants at: BATTLE CREEK, MICH., MARSHALLTOWN, IA., STRATFORD, ONT.

WEIGH THE FACTS— AND YOU'LL CHOOSE BOSTON HOSE!



COMPETITIVE FIRE HOSE
Less material — less wear

BOSTON FIRE HOSE
More material — far longer wear!

MORE OF THE FINEST YARNS MAKES BOSTON FIRE HOSE WEAR FAR LONGER —yet it handles and stores easily!

Common sense tells you: the craze for lightweight hose can go to extremes. You can sacrifice wear for weight. Take out material, and you lose durability.

So, we state proudly—BOSTON Fire Hose IS heavier. Because the extra weight is in the warp yarns. You get more wear for your money.

See your BOSTON agent or write to BOSTON for free descriptive literature

BOSTON FIRE HOSE

BOSTON WOVEN HOSE & RUBBER COMPANY
DIV. OF AMERICAN BILTRITE RUBBER CO. INC.
BOSTON 3, MASS.
ORIGINATORS OF CIRCULAR WOVEN FIRE HOSE

In roaring steel mills . . . in vital oil fields throughout the world . . . at throbbing power plants large and small . . . behind the guarded gates of highly-secret atomic installations and missile centers—wherever complete fire protection is important, you'll find Ansul. • Industry knows that only Ansul digs deep into basic fire research, that Ansul can be depended on for the best answers to fire protection problems. • More than 20 years ago Ansul began this search for new and better ways to prevent fire loss. Ansul pioneering continues today with the introduction of new, improved fire fighting equipment and advanced training techniques. • Put this knowledge and ability to work to help you build the complete fire protection program that could someday save your plant from destruction. • Start with Ansul people. Draw on their technical skills, their practical experience to solve the fire protection problems you have. ANSUL CHEMICAL COMPANY, MARINETTE, WISCONSIN.

new products, new ideas for better fire protection

ANSUL

REFRIGERATION PRODUCTS
FIRE FIGHTING EQUIPMENT
INDUSTRIAL CHEMICALS

A Tragedy In Chicago...

was told in grim detail recently in newspaper headlines across America. 90 children and three adults lost their lives in a Chicago school fire. The news stunned the nation.

We at Gamewell are deeply concerned. Our sole business for over 100 years has been automatic fire detection and alarm systems. We know that science has provided equipment to prevent such tragedy.

Tragedy is a teacher. But often, after the headlines have faded, tragedy's greatest ally — *a man's own short memory* — lulls communities into complacency. Chicago's disaster gives mute testimony of the great danger of fire — and that hazards of fire are everyone's business.

If you are concerned with the safety of your children in your community's schools, have your Fire Chief, or School Board Official contact a Gamewell engineer. He is a highly trained expert in fire detection who can give you information, examples of fire alarm installations, and he will survey your buildings.

He is backed by the largest plant in the world engaged exclusively in the manufacture of fire and other emergency signalling systems and equipment. Have your official phone the nearest Gamewell office — we will gladly accept the charges.

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THE GAMEWELL COMPANY
First When Seconds Count

FIRE
ENGINEERING
THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

VOL. 112, NO. 2 FEBRUARY, 1959

Act Now for School Fire Safety

Following the recent holocaust at Our Lady of the Angels School in Chicago, many fire officials as well as education and government authorities have re-examined the fire safety regulations of their respective areas. As crash campaigns to secure compliance with existing codes and ordinances reach their climax and gradually decrease, many persons will begin looking about for some criteria to judge their immediate future actions concerning legislation on the subject. Before final action is taken on any proposals, it is suggested that all persons, in and out of the fire service, first read the opening paragraph of the report by the coroner's jury which investigated this fire.

The foreword states in part: "Proper fire protection is not a luxury—*it is a necessity.* It is just as important to a school as having a heating plant or proper desks. School officials have a moral responsibility to return the pupil safely to his home—education is not their sole function." The conclusion of the paragraph quickly analyzes the problem which faces the public today. The jury states: "To get proper fire protection, all that is needed is (a) the desire to have it, (b) the money and (c) time. These recommendations are based primarily on safety to life, with property preservation of secondary importance."

These few words sum up the situation which confronts many communities, religious groups and private organizations who presently operate schools throughout the nation. In order to insure that another fire of this nature does not occur soon, these words must be kept in mind as a guide to all our actions in the immediate future.

The desire to have sound fire protection immediately requires a knowledge of how to proceed in achieving it. The recommendations of the jury, while directed to the City of Chicago in particular, are sufficiently broad and based upon accepted rules of good procedure that any community or group might well adopt them. The report itself may easily be adapted by fire departments wishing to have a good outline of school fire safety requirements for inspection use. When coupled with sound building and fire prevention codes, it is reasonable to expect that any structure used for public assembly which meets the recommendations, will be well protected.

Financing the changes and improvements necessary to meet the recommendations may cause the first hesitation on the part of responsible officials who naturally may fear the reaction of those who must foot the bills. It is at this point that the people concerned must be made to realize that gambling a fire will not occur has led to the unsafe conditions found in schools all over this country. Betting dollars against lives is an invitation to further disaster.

This is a most important factor. As each day goes by with deficiencies left uncorrected, we increase the chances of another tragedy occurring as we debate the issue. An old adage of the fire service holds that buildings, of themselves, present little in the way of a fire problem. It is the occupancy of buildings, the human element, which creates the serious hazard. Judging from press reports of inspection campaigns, many of the reported shortcomings have been temporarily corrected and school sessions continue. In the meantime, the children who occupy such structures are being asked to risk their lives against a fire occurring in these buildings.

The records since December 1, 1958, show that schools are continuing to burn whether from arson at the hands of fanatics or from accidental causes. Unless we move quickly to correct the basic unsafe conditions in every part of this nation, all discussion may be in vain.

It has been said that our form of government causes the people to act only in the event of a crisis. Judging from events which followed the Chicago school fire, the crisis is upon us. The fire service must now take its place in the forefront and insist that these matters be met head on without further delay. A pattern for concerted action has been laid out by the jury which investigated the fire, and its findings have been made known to the public. The time for action is now. Schools which are destroyed by fire may be rebuilt; dead children are lost forever!

Wm O'Brien

Grist mill at Longfellow home in Massachusetts is typical of sites maintained for historical value

Historic Wayside Inn, Sudbury, Mass., made famous by Longfellow and owned by Ford Foundation. Built in 1686, it was destroyed by fire on December 22, 1955

Let's Protect O

Thatched-roof log cabin is visited by author at village commemorating very early American colonists. Prompt fire protection measures are necessary at locations of this type

Despite excellent efforts to preserve historical sites and artifacts, too little thought has been given to destruction by fire

By JOHN H. JEBENS

THE EFFORT exerted by organizations and individuals to preserve memorabilia, historical shrines and other antiquities so dear to the hearts of every American citizen is commendable. Great strides have been made toward safeguarding the wealth of early American relics. Perhaps inspired by the accomplishments of the staff at Williamsburg, Va., each year one hears of another "restoration" or replica of originals, taken from authentic plans.

Among these cherished shrines may be found birthplaces of famous Americans, homes of those who helped mold our way of life. In addition, whole villages have been transplanted, rebuilt and restored. Some locations contain, in many instances, artifacts and relics which have come down through the generations. Such things can never be replaced.

Several years ago the Wayside Inn, of Longfellow fame, suffered a disastrous fire due to the lack of certain equipment primarily designed to safeguard structures. At Castile, N. Y., near Letchworth State Park, in 1904, the Pike Mastodon suffered serious damage from fire which destroyed Pike Seminary.

The National Fire Protection Association has on record reports of 148 fires which have occurred in historical landmarks. These show that 18.5 per cent of the fires were caused by design fallacies or lack of preventive maintenance; 16.2 per cent were due to poor housekeeping and lack of proper employee training or supervision; careless smoking alone caused 7.5 per cent.

Monies derived from insurance coverage can pay for replicas and reproductions, but priceless originals can never be replaced. This is regarded as a poor second best by many history-loving

Christiana Campbell's Tavern and Coffee House at Williamsburg, Va., is one of many restoration structures equipped with fire detection equipment

Our American Heritage

Americans. Although, "the old homestead" may have so far been spared the ravages of fire, a survey of the properties by a competent specialist will show what may be done to protect it.

Persons responsible for the construction or maintenance of historical properties should review their installations and establish a plan for correcting deficiencies in fire protection and prevention. A competent fire protection engineer should be retained as a consultant to review plans of all alterations and new construction. The fire protection engineering consultant and the architect should work closely together to include in the building plans all possible segregation of hazardous areas as well as fire-resistant and noncombustible material such as metal lath and plaster. The NFPA manual titled "Protecting Our Heritage" will be invaluable in planning better fire protection.

In planning for the protection of historical properties, a number of basic problems must be considered. These buildings will be either of frame construction or masonry wall and joist combined with frame. None will be non-combustible, let alone, fire-resistive. The wooden members will be exceptionally dry and in many cases brickwork will be in a state of disrepair, particularly chimneys where

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Fire Detection at COLONIAL WILLIAMSBURG

THE MOST COMPREHENSIVE restoration project ever undertaken in this country is the historic portions of Williamsburg, Va., located some 50 miles east of Richmond. The former capital of Virginia is being returned to its 18th century appearance by means of funds provided by John D. Rockefeller, Jr. Over $50,000,000 have been expended and the work still continues.

According to Fire Marshal Elliot Jayne, the restoration corporation works on the premise of prompt warning when a fire

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Fire detection systems in Restoration buildings give both visual and audible alarms at this cabinet located at the duty desk of the municipal fire house. A warning also sounds in the protected building

Radiation Hazards in Fire Fighting

By JOSEPH E. LOCKWOOD*

This article is condensed from a paper delivered by the author at the 29th Annual Firemen's Training School, Texas A & M College, July 1958. Much of the material is taken from the three-day course provided to fire department instructors by the Atomic Energy Commission. For these courses the Commission has been officially commended by the International Association of Fire Chiefs and Francis I. Brannigan, safety engineer and coordinator of the training presentations, received the Training Officers Conference Award for outstanding service. All illustrations are from the AEC.—Editor

THE DEVELOPMENT of atomic energy has produced radioactive materials which are providing and will continue to provide benefit to mankind. At the same time atomic energy presents many hazards. Most people are quite confused about these hazards; some try to ignore them while others tend to overemphasize them. In years to come atomic energy will extend to all areas of our industrial, commercial and educational structure. As time goes on the radiation hazards of atomic energy will become more complicated because of the presence of radioactive materials at many locations within the areas of our fire protection responsibility.

The hazards of radiation are just another problem to overcome, as many others have been in the past and many more will be in the future. These are not so complicated that they are beyond the range of understanding of the fire fighter. We can leave the technical aspects for the specialist in this field as it is necessary only for us to understand the hazards as they affect us and how to protect ourselves. The hazards of atomic energy are those of modern-day living, neither to be feared unreasonably, nor to be ignored.

Types of radiation

This discussion is concerned only with those radiations from atomic energy which are primarily a health hazard; the same that befell many persons after the atomic blasts at Hiroshima and Nagasaki, and who died as a result of radiation sickness.

The immediate hazard, whether it comes from the fall-out of an H-bomb or radioactive particles dispersed as the result of an accident involving a truck delivering radioactive material to a hospital laboratory or industrial plant, is Gamma radiation.

Gamma radiation travels at the speed of light. You do not feel, see or taste it as it passes through your body leaving a wake of dead cells behind. Alpha particles and Beta rays are the other two main types of radiation released by atomic energy or radioactive materials. These are too slow or weak to do more than damage the skin. The Alpha and Beta particles, if allowed to enter the body through inhaled dust, or taken in with food or drink, or through open wounds can present a long term problem.

Effects of radiation

Overexposure to radiation is a serious health hazard and may cause death. You can get serious skin injuries from the Alpha particles and Beta rays that pour out from a radiation source. If a large amount of radiation matter is taken into the body, it may bring on cancer or it might upset human genes and result in mutation in generations to come. Sterility, long advertised as a major H-bomb alarm, is not a serious worry—since radiation strong enough to sterilize is more than strong enough to kill. Medical research has resulted in amazing discoveries for the treatment of radiation sickness. Regrettably, no complete cures are yet available for some intense radiation sicknesses. There are, however, steps in the right direction as we slowly but surely learn to live with the atom.

Relative hazard concept

The simple approach to the Nuclear Age is to place radiation in its proper perspective in relation to other hazards of fire fighting. It should be accepted in proportion to the benefits to be obtained. In fire fighting, risks are undertaken in direct proportion to the values, both in life and property, at stake in the fire.

We constantly carry on the process of risk evaluation. The same is applied to the hazards connected with the use of radioactive materials. You may not have to concern yourself with this problem today, but the Atomic Age is here. You will have the problem in the future and you must be prepared to meet it.

The atomic industry is primarily engaged in employment of radioactive materials which are useful to man, for the energy released and which can be readily detected. Various uses of radioactive materials are too numerous to describe here. As example: Radiation makes it possible to trace biological processes in man, animals and plants. It is used to trace mechanical processes and metal wear.

* Fire Marshal (ret.) Eighth Naval District, New Orleans, La.

DON'T SPREAD CONTAMINATION!
WHERE IS THAT AXE?
BETTER CHECK UPSTAIRS
I NEED AN AXE!
MAKE THAT LINE UP-GET IT ON THE RIG--
GOT A BARREL OF ROENTGENS ON FIRE--WILL HOLD
BETTER CHECK EXPOSURE

Density of material is measured by absorption of radiated energy, e.g., radiography and thickness gauges. Radioactive material is frequently used to measure flow of oil in pipelines.

Released energy will destroy living cells; the hazard of radiation is also in this effect. Radioactivity is used to destroy malignant tissue in man and to sterilize foods. It is used to excite the atoms of certain materials, such as the luminous dials of watches and to produce electric power.

Certain radioactive materials release energy which will penetrate other matter and change its nature, releasing energy in the process. The primary objective may be to release energy, such as for atomic weapons or atomic power reactors, or changing one substance into another, e.g., plutonium or other reactor-produced isotopes. In either case, energy is released and matter is changed. Radiation machines are used to perform many services which man is also capable of performing with radioactive materials, e.g., the X-ray machines.

Reactor-produced isotopes

The use of isotopes may be one of the main sources with which fire fighters come in contact with radioactive materials. Isotopes are forms of the same element which have the same charge but different masses. There are numerous radioactive isotopes of the many elements which are included in the make-up of this great universe.

Locations where radioactive sources may be found include: Universities, laboratories, industrial plants, construction sites, hospitals, doctors' offices, atomic power plants, and various transportation conveyances. These locations should be identified for purposes of pre-fire planning in order to provide intelligent operation at the fire scene. The locations may be learned by observing radiation warning signs when inspecting, or by information obtained from state health departments of locations of Atomic Energy Commission licensees.

It should be noted that the AEC has control only over radioactive materials produced as a by-product of atomic fission. Many radioactive materials, such as radium are not subject to AEC regulations.

Fire service problems

Accidents* or fires involving conveyances transporting radioactive materials present a serious radiation contamination problem, if the protective lead pig or container is broken open or melted down. Shipments which present a severe hazard will be accompanied by trained personnel. Compliance with instructions from them is most important.

Fire service problems of the atomic energy industry include:

1. Presence of radioactive material which may be a health hazard to fire fighters.
2. Possible contamination of fire department equipment.
3. Possibility of increased loss due to spread of contamination by fire fighting operations.
4. Possibility of an accidental release of nuclear energy.
5. Fact that some radioactive materials are pyrophoric (ignites spontaneously).
6. Presence of radiation machinery (atom smashers).
7. Miscellaneous problems such as filters, strippable coatings, etc., in laboratories, industrial plants, etc.

AEC course

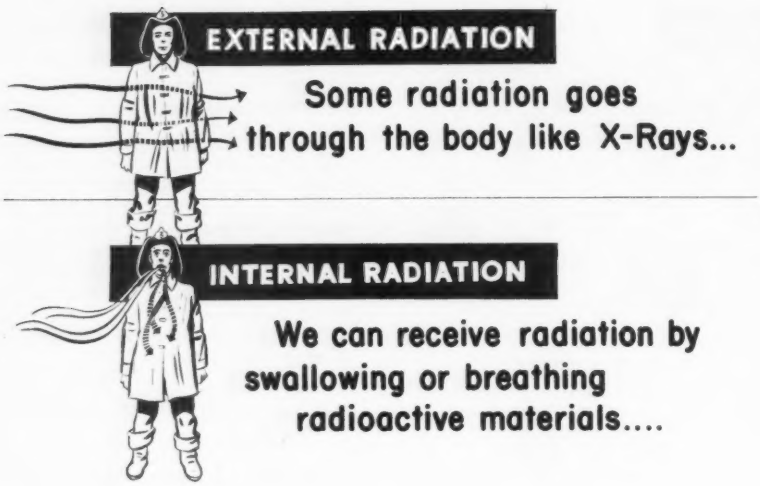
The Atomic Energy Commission is conducting courses** throughout the country to qualify instructors to teach the fire hazards of the atomic industry. These courses are given primarily to fire and police departments. The purpose is to discuss the hazards which have been introduced into our fire fighting operations by the development of the peacetime application of atomic energy. The course is designed so that you can understand the material without any formal scientific background. A clear distinction is made between that which it is necessary to know and that which presents background which is useful but not necessary. Objectives of the course are to impress upon the students:

1. An understanding of the difference between internal and external radiation hazards and the types of protection needed for each.
2. The necessity for pre-fire planning.

Continued on next page

* The AEC has made public information relating to the obtaining of assistance in the event of an incident involving radioactive material. (See FIRE ENGINEERING, November 1958).

** These courses are scheduled a full year in advance. Information may be obtained by writing: Safety and Fire Protection Branch, Atomic Energy Commission, Washington 25, D. C.


EXTERNAL RADIATION
Some radiation goes through the body like X-Rays...
INTERNAL RADIATION
We can receive radiation by swallowing or breathing radioactive materials....

Continued from Preceding Page

3. The fact that external radiation does not make things radioactive.

4. The fact that an explosion which might occur in a plant using radioactive material will not be an atomic bomb type explosion.

Roentgen

The measurement unit for external radiation is called the "roentgen" and abbreviated as "r." Radiac instruments are used to determine the radiation intensities by means of an ionization chamber which registers the intensity on a scale. There are other means of registering the intensities. The film badges worn by persons in areas of radiation will measure the total intensity of exposure, as will the dosimeter which measures the total dose of radiation for the period of exposure.

Figures borne out by experience show that the effect of radiation on the body depends upon many factors. Four hundred r of the total body exposure is the approximate dose that it will take to kill 50 per cent of the people exposed. Upward of 600 r or more may kill all of those exposed. Some radiation sickness with nausea and vomiting may be noted at the 100-r level. At 50 r, there will be some detectable temporary changes in the blood. At the 25-r level there is no detectable change.

An atomic worker can receive 15 r in any year, provided that is total accumulated exposure is not more than 5 r multiplied by the years of his age past age 18. Let us consider a man, age 25, who starts to work in the atomic industry. He gets 15 r a year for three years. Has he exceeded the standards? No. At the age of 25 he had already accumulated 35 r of permissible exposure (5 r per year since 18). At the end of the three years work he had accumulated 50 r of permissible exposure. At 15 r of exposure per year for three years his total actual exposure was 45 r. He still had 5-r permissible exposure in the bank.

From this it is clear that concern must be given to ensure that fire fighters do not exceed their banked or accumulated exposure limits. The Bureau of Standards has set an emergency radiation exposure of 25 r. This would apply to fire fighters.

It was previously noted that at the 25-r level, there is no detectable effect from the radiation. This is not to say that fire fighters should be carelessly exposed up to the emergency permissible level. It does give us a figure under which we can operate if the situation makes it necessary, and the degree of hazard is acceptable in relation to the benefits to be gained by the exposure.

External radiation

Protection against external radiation comes in the form of time, distances and shielding. Our protection is generally a combination of two or more of these factors. Time as a factor is easily understood. The amount of radiation one will receive equals rate times time. For example: if the radiation rate remains constant, in one hour one will receive three times that received in 20 minutes

The best protection available to the fire fighter is distance. This is because the radiation hazard decreases as the square of the distance from the source. That is, at 2 feet from the source you will get only one-quarter of the radiation received at 1 foot. At 5 feet from the source, 1/25 of that received at 1 foot. And at ten feet from the source the radiation would be 1/100th of that received at one foot.

Shielding for protection against external radiation must in the very nature of things be heavy and dense. Lead and concrete are used exclusively as shielding. Where shielding exists, it should be used to the greatest extent possible. However, it may not be possible to remain shielded and accomplish the objective, or there may be no shielding at all. It is obvious that the best protection available to the fire fighter is a combination of remaining as far away from the radiation source as practical and in the area as short a time as possible.

Therefore the obvious application of safety to the fire fighter is to reduce the time of exposure to the minimum necessary to do the job. Should a severe radiation condition be encountered, the factor of time is met by rotating personnel.

Imagine a fire in a radiation area. When the smoke clears away your men notice a sign, "Personnel Should Remain In This Area Only One-half Hour a Day." They have been in the area one hour and express concern to you. How would you dispose of their fears? It should be remembered that warning signs giving information such as the amount of time it is safe to remain at a given location are based on the extremely low permissible levels.

Once-in-a-lifetime dose

The fire fighter has a permissible emergency dose of 25 r. The weekly permissible emergency dose of 25 r or mr per working day. In the area where the fire fighters were working the radiation level is 120 mr per hour. The plant employee who has 60 mr could stay in the area of 120 mr one-half hour each day without exceeding his permissible radiation dose. The fire fighter has a permissible emergency dose of 25 r or 25,000 mr. Therefore the one-hour exposure of the fire fighters represent only about 1/200th of his emergency dose.

This does not represent any disregard for the fire fighter but reflects the fact that since he is exposed very few times to radiation, it is possible for him to receive greater amounts than employees of the plant who are exposed daily. The warning sign in this case is more applicable to the plant employees than to the fire fighters.

It should be noted that the 25 r permitted by the Bureau of Standards is a "once-in-a-lifetime" dose. This again points out the necessity for careful preplanning of fire fighters operations in dangerously radioactive areas to limit the number of personnel involved and their exposure time to the minimum necessary. Otherwise, a situation may develop where several members of the fire department have received a substantial portion, if not all, of their "once-in-a-lifetime" dose. This could induce problems of scheduling personnel, and is particularly to be deplored if the exposure of personnel to radiation was unnecessary.

Irradiation

It is almost universally believed that external radiation makes radioactive anything which is in the radiation field. The answer is No! Smoke and water from a fire where there is an external radiation source are not made radioactive even though the smoke and water pass through the rays being given off by the radioactive material. Suppose the fire involves the radioactive material, will the smoke and water be made radioactive? No! They are not, but they may be radioactively contaminated! The smoke and water may be carrying particles of radio-

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Port Authority fire fighters use turret nozzles of fog-foam-carbon dioxide unit to blanket Viscount with foam. Units were in operation a minute after alarm
—Port of New York Authority photo

Foam Controls Idlewild Plane Crash

A SPECTACULAR flaming ground crash virtually destroyed two aircraft at New York International Airport on November 10. A Seaboard and Western, four-engine Super Constellation cargo plane was taking off at 11:01 a.m. on a training flight. As it rolled down runway 31 R, the plane veered sharply to the left out of control. The left wing dipped and dropped off. The plane burst into flames and continuing out of control, bumped and skidded more than a half-mile and crashed into a parked Trans Canada Viscount which stopped it from smashing into the Temporary Terminal Building. It is estimated that the Constellation had reached a speed of approximately 130 miles per hour, and had just barely become airborne.

As soon as the aircraft went out of control, the CAA tower controller activated the airport emergency phone system alerting facility forces that there had been an aircraft accident. At the same time, the controller notified the New York City Fire Department via direct line to the fire dispatcher. All Port Authority equipment and emergency forces responded. Simultaneously with the emergency equipment leaving quarters, the police desk also notified the New York City fire dispatcher via direct line. All equipment immediately went into operation upon arrival on the scene, estimated at 60 seconds after receipt of the alarm.

Two stewardesses checking their supplies aboard the Viscount were able to scramble to safety. The fire and rescue crew extinguished enough of the fire to form a path which the five crew members used to escape from the Constellation, after it had come to a stop. Although both planes were virtually destroyed, only 16 persons suffered minor injuries. Had the crash occurred 10 minutes later, the Viscount would have been taking on passengers.

Major problem was to prevent blazing gasoline from spreading the fire. Empty foam cans in the foreground were used to form dike to hold foam blanket on gasoline
—Port of New York Authority photo

3,250 gallons of foam used

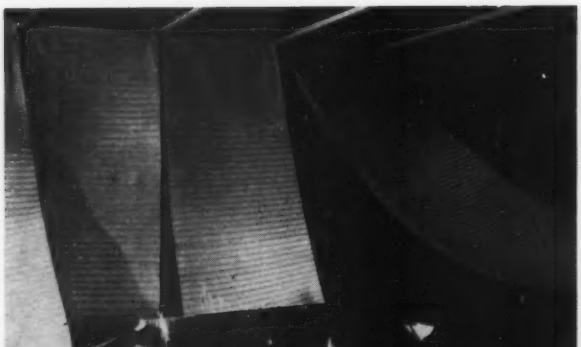
A combination of luck and circumstances prevented a disaster. There were no service vehicles on the ramp area at the time. The Viscount was parked in an intercepting position. The crash occurred only a few hundred feet from the garage in which the fire apparatus is housed. The fire and rescue crew covered the flaming gasoline with foam, keeping the blaze away from the crowded terminal building.

The Port Authority fire and rescue crew responded with two fog-foam-carbon dioxide trucks and two nurse trucks. Meanwhile, other auxiliary crew members were converging on the fire scene from their respective posts throughout the sprawling airport. Approximately 190 Port Authority employees, under command of Captain Richard Brady, operated at the fire. They used 3,250 gallons of foam.

A second-alarm assignment of New York Fire Department units, including Rescue 4 and the Foam Supply Unit, operated under the command of Chief of Department George David.

New York units stretched lines from field hydrants to supply the Port Authority trucks with water; they also operated foam hoppers and, in one instance, used a fog line to reach one side of the fire inaccessible to the turret pipes of Port Authority FFCD trucks. Ladder 155 raised its aerial to the roof of the Temporary Terminal Building and hand lines were used there to minimize damage to the building.

About 800 gallons of jet fuel in the Viscount's right wing, and the 5,000 gallons of gasoline the Constellation carried ignited. One of the main problems which resulted was the danger the flowing, flaming gasoline presented to the Temporary Terminal Building. To prevent extension by this means, the fire fighters improvised a dike with empty foam cans to hold a blanket of foam on the gasoline. The fire was brought under control at approximately 12:10 p.m., with complete extinguishment at about 12:20 p.m. The Civil Aeronautics Board and other interested parties are still investigating the cause of the crash. □□



According to the manufacturer, ceilings properly constructed of rigid vinyl sheeting will not hamper operation of a sprinkler system. In test conducted by Underwriters' Laboratories, in only 2½ minutes, sheets in the affected area fell away from the sprinklers, which operated within 5½ minutes from start of fire—*Photo courtesy Bakelite Company*

Plastic eyeglass frames practically explode in flames after ignition by cigarette lighter in experiment conducted by Chief Stuart M. Potter of the Greenwich, Conn., Fire Department. Chief Potter didn't time the speed of consumption but reported the photograph was taken a split second after ignition—Greenwich Times *photo by Hack Wilson*

PLASTICS—Boon or Bane?

By FRANK HANIFIN

ABOUT A YEAR AGO a resident of Greenwich, Conn., prepared to read the afternoon paper. He put on his eyeglasses, took out his favorite smoke and attempted to light it. As he did, his eyeglass frames caught fire and were consumed in seconds. He suffered severe facial burns. The spectacle frames were plastic.

On the other hand, to ensure complete protection against prevailing weather conditions, the entire underside of U. S. Air Force Texas Tower No. 2, a vital link in the nation's aircraft warning system, is coated with a formulation based on vinyl resins—another type of plastic.

These two examples point up the question, "Are plastics a boon or a bane?" While the truth most probably will be found somewhere between the two extremes, plastics are daily playing a more important role in home, office, store and industry. Since we must live with plastics —and sometimes fight fires involving them, let's learn more about them.

Considerable detailed research preceded the writing of this article. The writer is still engaged in research for a follow-up article and would welcome correspondence from anyone interested in the subject — fire fighters, underwriters, chemists, teachers or members of the plastics industry—on their experiences with plastics. Address letters to FIRE ENGINEERING, 305 East 45 Street, New York 17, N. Y.

What are plastics?

Plastics have been defined as synthetic or semi-synthetic organic materials capable of being molded under heat and pressure into a given shape and of retaining that shape after heat and pressure are removed. They are described as synthetic or semi-synthetic since certain plastics—rubber and resins—are formed in nature. The natural resins are an organic substance, lacking definite form, found in or exuded from plants, especially from fir or pine trees, yellowish or dark in color and usually translucent or transparent. They are soluble in alcohol or ether. Man-made plastics are also organic materials—compounds containing carbon. Thus we may describe plastics as a large and varied group of materials, consisting wholly or in part of combinations of carbon with oxygen, hydrogen and other elements, and capable of being readily formed into many shapes.

History of plastics

While plastics are sometimes described as the "modern miracle materials," the first plastic, polystyrene, was discovered more than 125 years ago. A French scientist, Bonastre, in 1831 distilled the balsam of the Liquidamber orientalis tree (a genus of the witch hazel family, native to the region southwest of Turkey) to isolate the water-white substance from which polystyrene was derived. Polystyrene achieved commercial importance only recently, however. About 40 years after Bonastre's experiment, Professor Bayer discovered that carbolic acid and formaldehyde could be united to form a strong, hard resinous material. For more than 35 years, this product remained merely a curiosity.

The first commercial plastic, cellulose nitrate, was created in the United States in 1868. Due to a shortage of ivory for billiard balls, John Wesley Hyatt hit upon the idea of mixing pyroxylin with solid camphor.

Incidentally, nitration, the process of

treating cotton or wood fiber with nitric acid or with a mixture of nitric and sulphuric acids, is the basis of the manufacture of many products. Trinitrate of cellulose (pyroxylin) is formed by mild nitration; hexanitrate, a high explosive, results from a more vigorous nitration. Pyroxylin dissolved in an alcohol-ether solution forms collodion, used to coat cuts and wounds, and the basis of nail polish. Pyroxylin mixed with camphor, as described above, forms cellulose nitrate. By impregnating canvas or other tough materials with pyroxylin, patent leather is manufactured. Pyroxylin dissolved in amyl acetate (banana oil) or a great variety of other solvents forms the base of lacquers.

In 1909, Dr. Leo H. Baekland developed a commercial process for making phenolic, the carbolic acid-formaldehyde product originally discovered by Professor Bayer. From 1909 until 1926, only two more commercial plastics, cold molded and casein, were developed. Between 1926 and 1945, at least 19 more were introduced commercially.

There are about 14 basic plastics. The cellulosics include, besides cellulose nitrate, cellulose acetate, cellulose acetate butyrate, cellulose propionate, ethyl cellulose and regenerated cellulose (cellophane). The other basic plastics which, unlike the cellulosics, are made from synthetic resins are: Acrylics, alkyds, epoxys, fluorocarbons, melamines, polyamides, phenolics, polyesters, polyethylenes, polystyrenes, silicones, ureas and vinyls.

Thermoplastic and thermosetting

Whatever their properties or form, plastics all fall into one of two groups—the thermoplastic or the thermosetting. The thermoplastic materials become soft when exposed to sufficient heat and harden when cooled, no matter how often the process is repeated. The thermosetting plastics are set into permanent shape when pressure and heat are applied to them during forming. Reheating will not soften these materials.

While all plastics fall into one of these two groups, there is a multiplicity of plastics. The National Board of Fire Underwriters in 1955 listed more than 700 trade names, and the Society of the Plastics Industry, Inc., notes that today a minimum of 5,000 companies in the United States make plastics their business. They divide into three large categories which sometimes overlap—the plastics materials manufacturer who produces the basic plastic resin or compound, the processor who converts plastic into solid shape, the fabricator and finisher who fashions and decorates it.

Growth of the industry

In 1910, production of phenolic in a barn in Yonkers, N. Y., never reached 25 barrels. Today the plastics industry runs into the billions, both in dollar value of its finished products and in the pounds of plastic raw materials produced. Early this year the Society of the Plastics Industry announced that the production of plastics and resins materials in 1958 increased 5 per cent, reaching a new all-time high of approximately 4,544,000,000 pounds. The industry is estimated to be growing at a rate five times that of all industry. H. E. Humphreys, Jr., chairman, United States Rubber Co., told the International Dinner of the Society of the Plastics Industry last November, that world plastics production could reach 27 billion pounds by 1968, triple the record 9 billion pounds produced throughout the world in 1958. He pointed out that every American annually uses about 24 pounds of plastics in his daily life—and plastics are notably lighter than competitive materials.

Widely used

We have only to look around us in our daily lives to see the widespread use of plastics that adds up to these impressive totals. Airplane canopies and windows, TV and camera viewing lenses, costume jewelry, automotive tail lights, hearing aid cases, radio cabinets, buttons, toys, lamp shades, tool handles, telephone handsets, flashlights, eyeglass frames, third-rail insulators, washing-machine agitators and phonograph records are but a few of the varied uses of plastics. And, according to recent statistics, plastics already rank fourth in the building construction field, being outranked only by steel, lumber and glass.

The drapes in your living room and the shower curtain in your bath may be vinyl. The toilet seat is probably cellulose acetate. The loaf of bread your wife purchased at the grocery may be wrapped in polyethylene film. If you prefer rolls, some are sold in boxes made by extruding a coating of polyethylene onto cardboard stock. Some readers may need acrylic dentures to chew the bread or rolls. There's a chance the tableware will be melamine and your electric toaster may have a urea base. When you retire to rest it may well be on a urethane foam mattress. If boating is your hobby, you may know that the number of plastic boats on exhibit in the 49th National Motor Boat Show scored a 43 per cent gain over last year. Finally, the next time you respond to a fire you may be wearing an ABS plastic helmet and stretching a hose line fabricated of polyester or polyamide. You may have to use nylon salvage covers before taking up. And if the fire happens to be in brush you may use a strap-on neoprene-coated nylon water bag with a hand pump connected by a neoprene hose.

To be continued

THERMOSETTING

Type	*Typical Uses*	*Comparative Flammability*
Alkyds	Light switches, enamels and lacquers for automobiles, refrigerators, etc.	Low
Epoxys*	Printed circuits, laminated tools and jigs	Low
Melamine	Tableware, hearing aid cases	Very low
Phenolics	TV cabinets, washing machine agitators	Low to none**
Polyesters	Household utensils, electrical appliances	Very low
Urea	Radio cabinets, electrical devices	Very low

THERMOPLASTIC

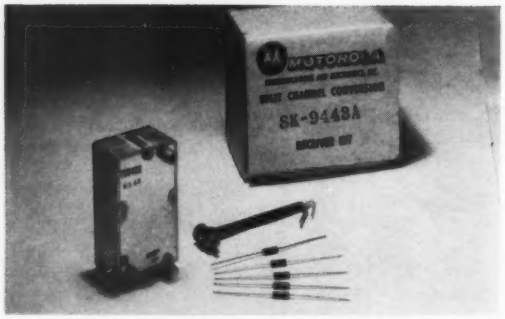
Cellulosics		
Cellulose Acetate	Playing cards	Low
Cellulose Acetate Butyrate	Telephone set housings	Low
Cellulose Propionate	Housings for transistor radios	Low
Ethyl Cellulose	Garden hose nozzles	Moderate
Cellulose Nitrate	Eyeglass frames, toilet seat covering, piano keys	High
Acrylics	Automobile tail lights, radiator ornaments	Low
Fluorocarbons	Valve seats, pump diaphragms	None (on application of heat, sample deforms slowly—fumes are poisonous
Polyamides (Nylon)	Tumblers, faucet washers	Very low
Polyethylene	Flexible ice cub trays, squeezable bottles	Low
Polystyrene	Toys, wall tile	Low
Vinyls	Shower curtains, draperies, phonographic records	Low or very low depending on type of vinyl

* Epoxys are also thermoplastic.
** Depending on the filler used. Asbestos, mica and glass fiber filler—none; wood flour-cotton flock filler and rag filler—low; others rated very low.
Flammability ratings in this table are according to Handbook of Industrial Loss Prevention, prepared by the staff of the Factory Mutual Engineering Division, and published by McGraw-Hill Book Company, Inc., New York, Toronto, London, 1959.

—*Courtesy Dumont Photographic Dept.*

In general, a screwdriver adjustment of deviation control by technician will comply with FCC regulations until 1963

Meeting the SPLIT-CHANNEL STANDARDS



Typical kit of modification parts. While not required by FCC, receiver conversion may be necessary to insure proper reception of narrow-band signals

By DONALD M. O'BRIEN

IN AN EFFORT to break a log-jam of increasing clamor for additional radio frequencies and reduce interference to and by present users, the Federal Communications Commission recently ordered that all radio systems operating in certain bands of the spectrum reduce transmitter bandwidth. An FCC report and order of June 26, 1958, in effect split the present 25 to 50 mc channels in two, and nearly tripled the 152-162 mc channels. This action holds promise of eliminating many fire service radio problems presently existing. By this means new frequencies became available for use by the services, although they have not yet been assigned.

In so doing, the FCC placed in effect certain technical standards for radio operation which had been adopted in Docket 11253, dated September 19, 1956. These affect all users concerned including the fire service. Because of these new changes, three modifications must be made in all transmitter installations now operated by the fire service. The first of these must be accomplished by present users on or before August 1, 1960. A second report and order on Docket 12295, dated December 17, 1958 and effective February 1, 1959, specifically exempts those frequencies below 42 mc from meeting any of the new standards until November 1, 1963.

New fire radio systems within the United States, excepting Alaska and the territories, licensed by the FCC after August 1, 1958, must comply at the outset. In addition, all users who modify their licenses to change frequencies or occupy an area which is not a slight expansion of their existing coverage, will be considered new systems and must immediately comply with the new standards.

What is required

The first step to be accomplished is to reduce the transmitter "deviation from

the present ± 15 kc to ± 5 kc. Deviation may be defined as the total amount of spectrum occupied by a radio signal each side of the "center" or identifying frequency. It is sometimes referred to in the trade as "swing."

This may be done only by a licensed technician and most units which have been manufactured since 1949 require only a screw driver adjustment which may be made during normal servicing. Once the deviation has been changed, the system is then transmitting "narrow band" and meets the rules until 1963. Some older models may require replacement of certain circuit components. In many cases these units will be difficult to convert to full compliance by the 1963 date.

The final steps necessary to correct the transmitting equipment to the new technical standards require that where power output exceeds 3 watts, a frequency stability of .002 per cent or better must be maintained in the 25-50 mc band and .0005 per cent in the 152-162 mc band. For less than 3 watts output, .005 per cent is required.

In addition, a low-pass, or audio roll-off filter is necessary on all transmitters over 3 watts output. The filter attenuates sharply all voice frequencies above 3000 cycles per second. While such a requirement may not appeal to a hi-fi fan, it is necessary for effective narrow-band operation.

The necessary range of the speaking voice is generally within 100 to 3000 cycles. The radiated signal must be wide enough to carry the intelligence impressed on it. Therefore the use of a filter is required if the frequency of the transmitter is to be maintained within the allotted bandwidth of 10 kc (±5 kc) and the speech is to remain undistorted.

Most of the recently manufactured radios already meet the previous requirements and units purchased during the past five years can, in general, be quickly adapted to the standards. The addition of oven-type crystals and the inclusion of an audio filter by the technician is usually the only necessary task.

In some older models temperature compensation of the oscillator circuit in the transmitter is dicated in order to prevent "drift" or movement off the designated frequency. This generally requires the addition of certain circuit components by the technician depending on the make and model. Some older transmitters cannot be economically converted to the new standards.

Further steps necessary

All of the foregoing apply only to the transmitter operating in the affected bands. Unifortunately these changes also create additional problems having a direct bearing on good reception in a converted system.

Presently operating wide-band receivers may work reasonably well in systems employing narrow-band transmitters providing the receiver stability is sufficient to prevent message loss. Some reduction of volume may be noticed, but a radio technician may be able to increase the audio gain to overcome this deficiency.

The wide bandwidth can prove disadvantageous when newly created channels are assigned by the FCC and become occupied. The receiver may then pick up unwanted signals from nearby stations on the adjacent frequencies.

Successful receiver conversion to eliminate possible headaches depends heavily on the original design. In some cases it will be necessary to install heated crystals and additional oscillator temperature compensation to provide the necessary stability for reception of the narrow transmitter signal. A new filter or "IF" (intermediate frequency) assembly may be required for proper selectivity. These changes will so affect the receiver performance that revision of the "discriminator" and "squelch" operation most likely will be necessary. This may require from 30 to 40 minutes time on the part of the technician,, or several hours of difficult work on each individual unit.

In large radio systems the length of time involved in completing a system-wide changeover may run into many man hours. In order to prepare for such a program it will be wise for the fire chief to hold a conference with the communications supervisor, the radio technician and the manufacturer's or distributor's representative. Competent opinions can then be obtained on the advisability of converting present units or purchasing a complete new system.

If full conversion is decided upon, a program may then be scheduled to include the removal from service of the individual mobile and station units; an inventory of the necessary parts; budgetary allowances; shipping and receiving dates and the expected completion date. In this manner the changeover may be accomplished in an orderly manner with the least inconvenience to the department as a whole, and with reasonable certainty that this project will be completed within the mandatory time limit set by the FCC. At the same time, allowance may be made for normal maintenance and service for operating units.

Factors governing decision

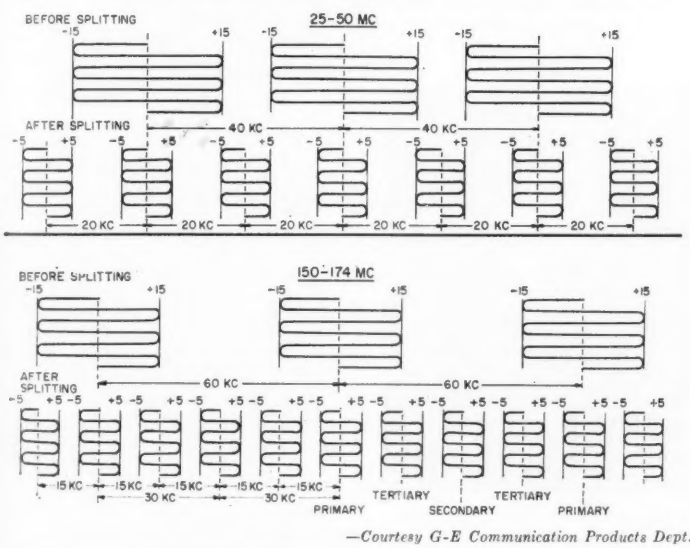
Serious consideration should be given at this time to complete replacement of older radio units with new models which must automatically meet the FCC standards and specifications. It has been a rule-of-thumb that radio equipment has an expected life of approximately 10 years. In some instances systems have been amortized on a five-year basis. In many cases the life span has been exceeded, but due to the new requirements a hard look must be given to the wisdom of authorizing a difficult conversion for equipment which may reach its life expectancy figure before or shortly after the final conversion date in 1963.

In the event full replacement is contemplated within a few years after the cut-off date, a complete cost evaluation should be made and compared to the figures for new units. Any comparison should include the costs for complete replacement versus the time required for conversion in man-hours, new parts and continuing depreciation. This may produce convincing arguments for justifying an increased capital expenditure budget for a complete new radio system.

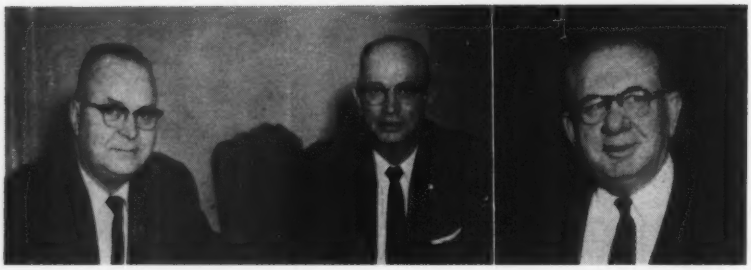
In this regard, the use of Civil Defense "matching funds" should be explored. The Federal Office of Civil and Defense Mobilization may provide funds for radio systems which are necessary for civil defense responsibilities "over and above" normal everyday requirements. It is suggested that before any conversion or re-

Continued on page 157

SPLITTING OF WIDE-BAND CHANNELS



—Courtesy G-E Communication Products Dept.



President R. C. Malmquist (left), First Vice President A. H. Lintelman (center) and Chief Ray Tiller (right), Missouri Valley director, who was honored for his 50 years in the fire service

IAFC Directors Meet

THE MIDWINTER meeting of the Board of Directors, International Association of Fire Chiefs, was called to order by President R. C. Malmquist at 9:00 a.m., Monday, January 26, in the Hotel Manhattan, New York. The roll call of officers showed the following present: President Malmquist, First Vice President A. H. Lintelman, Second Vice President Taylor, Treasurer G. A. Mitchell, Executive Secretary J. W. Stevens, and Secretary Manager B. R. Townsend. Directors and divisions represented were: E. Deignan, Eastern; R. J. McAllister, Great Lakes; R. Tiller, Missouri Valley; L. A. Marshall, New England; W. L. Miller, Pacific Coast Inter-Mountain; E. McDaniel, Southeastern; C. Meadows, Southwestern; W. J. Scott, Canadian.

Committee reports were the first order of business and occupied most of the day. Executive Secretary Jay W. Stevens reviewed the progress of the fire inspection campaign and the state fire prevention conferences. Fire Marshal William J. Scott reported for the Constitutional Committee and was followed by Roi B. Woolley, who reported in behalf of the Committee on Apparatus Maintenance.

Assistant Chief Thomas P. O'Brien, New York, discussed the communications problems facing the fire service due to radio channel splitting by the Federal Communications Commission. A discussion of representation before the FCC then occurred and it was decided to hire an attorney to represent the IAFC.

Secretary-Manager Townsend closed out the morning session with a report of IAFC representation on the recently organized National Fire Defense Advisory Committee, Office of Civil and Defense Mobilization. At luncheon, Lt. Gen. C. H. Heubener, director, New York State Civil Defense, addressed the board members.

At the afternoon session, Henry J. McFarland reported at length for the Civil Service Classification Committee. He was followed by Chief William J. Miller, chairman, Board of Trustees, International Fire Administration Institute, who gave an account of the trustees' meeting which had been held in New York on January 23 and 24.

Host Chief Adrian J. Meyers gave a brief resume of the plans for the forthcoming 86th Conference to be held in Grand Rapids, Mich., and the session closed with a report by Vice President Taylor for the Committee on Development of a Master Plan for the IAFC.

That evening a special dinner was given by the Pacific Coast Inter-Mountain Association in honor of the directors. The menu consisted of food from the western member states and featured elk which President Ivan Pearson, McMinnville, Ore., had bagged.

A surprise highlight of the evening was the presentation by New York Fire Commissioner Edward F. Cavanagh, Jr., of an honorary deputy chief's rank to Jay W. Stevens. The award was given in honor of Jay's assistance during the past four years in fire prevention inspection.

On Tuesday morning, Hugh Walker, American LaFrance, reported for the President's Advisory Committee and was followed by L. C. Canning, Midvale, Utah, chairman of exhibits, who summed up the report of the Los Angeles exhibits. He also reported the exhibit space for Grand Rapids was nearly sold out.

Dr. Mathew Braidech, NBFU, reported for the Committee on Radiation and was followed by James A. Hess, Boy Scouts of America, who congratulated the Association for the active support given the scouting program. Luncheon followed at the National Board of Fire Underwriters with General Manager Lewis A. Vincent as host.

During the afternoon, the board considered all committee reports and recommended an increase in dues to ten dollars per year be referred to a vote at the next conference.

A resolution recommending the installation in all schools of sprinklers, or fire detection systems where insufficient water is available, was passed. Chief Ray Tiller was then honored by resolution commemorating his 50 years in the fire service.

The meeting closed Wednesday morning. The dates set for the three conferences following Grand Rapids are: Rochester, N. Y., September 12-15, 1960; Las Vegas, Nev., September 25-28, 1961; and Toronto, Ont., September 24-27, 1962. □□

New York's Fire Commissioner Cavanagh pins honorary deputy chief's badge on Jay Stevens in appreciation of his efforts to assist city in fire prevention, while Chief George David looks on

The Program Committee (left to right): I. H. Case, FIRE ENGINEERING, Chiefs E. R. McDaniel, Lexington, Ky.; A. J. Meyers, Grand Rapids; R. J. McAllister, Plymouth, Mich.; and B. R. Townsend, secretary-manager

Scene of butane truck upset on Hollywood Freeway. Some gas ran down into out bound lanes at left—*LAFD photos*

Possible LPG Disaster Averted On Hollywood Freeway

PROMPT ACTION by the driver of an overturned butane truck and trailer combined with swift response by Los Angeles Fire and Police Departments averted possible disaster on the Hollywood Freeway, Friday, November 14. At 11:15 a.m., Charles Winfield, driver of the LPG tanker and trailer swerved to avoid an auto ahead, overturning both vehicles. A ¾-inch inspection valve on the trailer tank broke, releasing butane.

The accident took place at one of the narrowest points on the heavily traveled freeway's inbound lanes just south of the Pilgrimage Bridge at the end of Cahuenga Pass and within sight of the famous Hollywood Bowl. Winfield managed to stop inbound traffic and to slow outbound vehicles and send a spectator to call for assistance.

At 11:18, L.A.F.D.'s Westlake dispatcher received an alarm for an overturned gasoline truck from the police and dispatched Engines 76, 82, Truck 27, Salvage 27 and Battalion 5, Chief John P. Dick. Both Engines 76 and 82 are located approximately 1.2 miles equidistant from the center. As is customary in such freeway alarms, the apparatus responded from opposite directions—one company inbound and one outbound.

Chief Dick picked up the first on-the-scene report from Engine 82: "We have a LPG truck overturned with a good rupture and a stream going down to the outbound lanes." At this point on the freeway, the inbound lanes are higher than the outbound ones. Engine 82 put a 1½-inch line into action from its tank and began washing the gas into a storm drain. Meanwhile, more than 100 police were mobilized to block all traffic off the freeway from the San Fernando Valley to the Civic Center, causing a monumental traffic jam.

Chief Dick requested another engine and Engine 51 was dispatched. He ordered all vehicles stopped on the freeway outbound were waved over Engine 82's lines to expedite their removal.

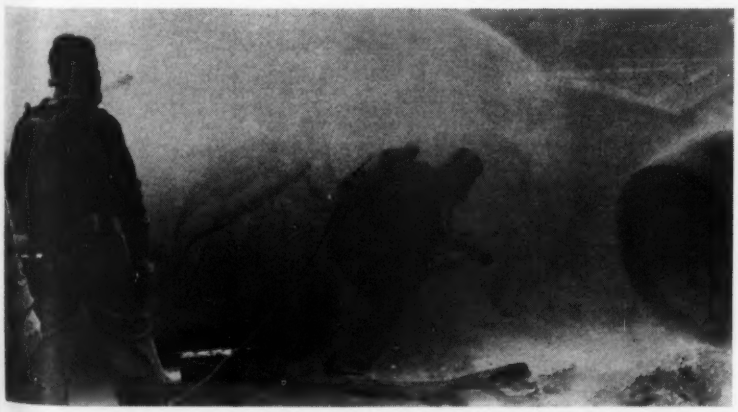
Engine 76 ran several hand lines in first from its 500-gallon tank wagon and then laid 1,200 feet of 2½-inch line. Engine 51 hooked to Engine 76's pump at a hydrant adjacent to the Hollywood Bowl and laid 1,150 feet of 2½-inch, while Engine 82 laid 750 feet of 2½-inch, 300 feet of 1½-inch and 350 feet of 1-inch hose.

Chief Dick donned an air mask, put on a lifeline, and followed by Auto Fireman Doug Evans of Truck 72 went in armed with a redwood plug and a rubber mallet to try and plug the leak. L.A.F.D. truck companies carry an assortment of redwood plugs for use on gas lines. The two men were covered by fog sprays from three lines. Despite some pressure from the outgoing gas, Dick plugged the hole.

Meanwhile, Division II commander, Assistant Chief Leonard Eggleston, ordered Engine 45 to Clinton and June Streets and Engine 61 to the Wilshire Country Club to stand by at storm drain outlets after conferring with public works officials. He further ordered that County flood control units and Culver City officials be notified of the gas drainage.

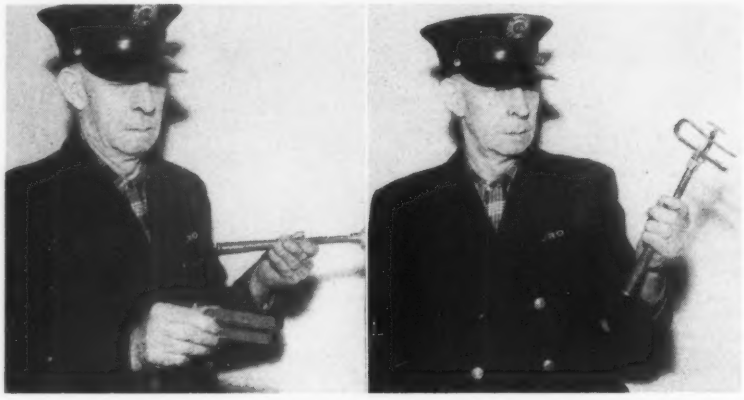
Dikes were then built of sawdust to keep the fuel from spreading. There was no ignition, but traffic was tied up for four hours before the scene was declared safe.

—Cliff Dektar



Battalion Chief John Dick uses rubber mallet and redwood plug to stop leaking butane

short cuts and gadgets



Improvised Sprinkler Stop Clamp

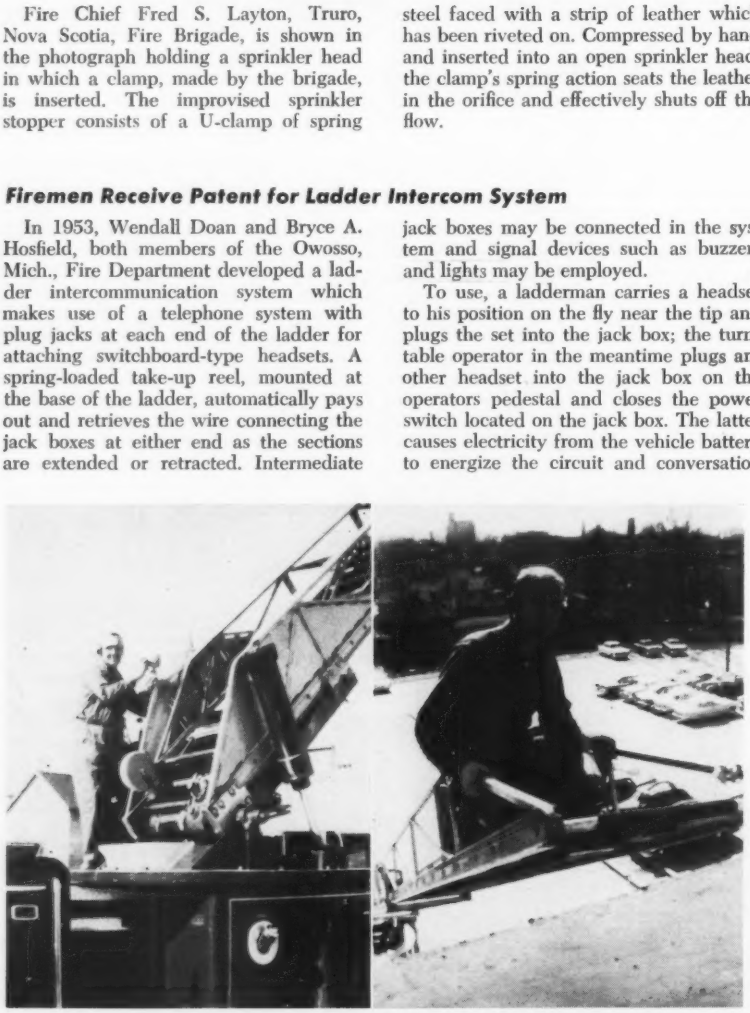
Fire Chief Fred S. Layton, Truro, Nova Scotia, Fire Brigade, is shown in the photograph holding a sprinkler head in which a clamp, made by the brigade, is inserted. The improvised sprinkler stopper consists of a U-clamp of spring steel faced with a strip of leather which has been riveted on. Compressed by hand and inserted into an open sprinkler head, the clamp's spring action seats the leather in the orifice and effectively shuts off the flow.

Firemen Receive Patent for Ladder Intercom System

In 1953, Wendall Doan and Bryce A. Hosfield, both members of the Owosso, Mich., Fire Department developed a ladder intercommunication system which makes use of a telephone system with plug jacks at each end of the ladder for attaching switchboard-type headsets. A spring-loaded take-up reel, mounted at the base of the ladder, automatically pays out and retrieves the wire connecting the jack boxes at either end as the sections are extended or retracted. Intermediate jack boxes may be connected in the system and signal devices such as buzzers and lights may be employed.

To use, a ladderman carries a headset to his position on the fly near the tip and plugs the set into the jack box; the turntable operator in the meantime plugs another headset into the jack box on the operators pedestal and closes the power switch located on the jack box. The latter causes electricity from the vehicle battery to energize the circuit and conversation between the men may be carried on as desired.

The inventors have received Patent No. 2,828,361 from the U. S. Patent Office.



Left: Take-up reel is mounted on ladder near turntable base. Wire cable runs along ladder rail to tip section jackbox and circuit return is through vehicle ground of metal ladder and chassis. **Right:** Man on tip of fly plugs headset into jackbox on ladder rail. According to inventors, his hands are free and the headset does not interfere with wearing of helmet

New Use For Coffee

During a recent forest fire in the vicinity of Peekskill, N. Y., members of Cortland Engine Co., Montrose, N. Y., discovered a closed pump gate had frozen due to extreme cold. This prevented use of a hose line on the fire.

An enterprising fireman obtained two cups of scalding hot coffee from a nearby Salvation Army canteen and poured them over the reluctant gate. The heat of the coffee did the trick—and extinguishing operations went forward in a normal manner. **H. Anagnost**

Telephone Tips to Public

The Los Angeles Fire Department publishes a press release which summarizes the weekly reports of fire and their causes. Appended to it is a fire protection or prevention tip which press editors may use as "fillers" or "column closers." The January 19 report contained the following which any fire department may find helpful:

Your Los Angeles Fire Department is often delayed by inadequate information supplied by citizens turning in a fire alarm.

When reporting a fire or emergency always:

1. Dial the correct number. If dialing emergency operator (116), tell her, "I want to report a fire to the Los Angeles Fire Department." (Remember, there is a slight delay as the call is transferred to the fire department.)
2. Give correct address of emergency and nearest cross street.
3. Give brief description of emergency.
4. Position yourself in sight of emergency apparatus to direct them.
5. When calling for a rescue unit, give telephone number from where call originated. (Fire operator can call back if location is incorrect.)

Trading Stamps to Help Pay For Vamps' Uniforms

Signs reading "We Save Blue Stamps" decorated the Upper Saddle River, N. J., Fire Department headquarters building. They constituted an appeal to local residents to turn in to the volunteers their blue trading stamps, to help them reach their goal of 1,200 stamp books to obtain parade uniforms.

Boxes requesting donations were placed in neighborhood gasoline, hardware and other stores which give the stamps in trade. In addition, 700 residents of the community received a letter explaining the purpose of the drive. Included in the same envelope was a stamp book and free page of blue stamps together with a list of merchants in the area who were cooperating with the vamps in the fund raising drive. □□

FALSE ALARMS

Loaded Dice

When the judge looked around for the defendant, he saw no one.

"Who's on trial here?" he demanded.

"I am," responded a young fellow from the jury box.

"But you can't be both the defendant and a juror!" the angry judge protested.

"No?" the lad sighed. "I was thinking I was kinda lucky."

The city slicker halted his car at a desolate crossroads and yelled to a farmer driving a load of hay. "Hey, Ezra, is this the way to Des Moines?"

The farmer looked up in a feigned astonishment. "By gummies, stranger, how'd you know my name was Ezra?"

"I guessed it," answered the slicker.

"Then, by heck," snapped the farmer, "guess your way to Des Moines."

A horse trainer confessed that just before the big race he had given his nag a stiff hooker of whiskey.

"Did he win?" inquired a curious friend.

"Nope," said the trainer, "but he was the happiest horse in the race."

Shot in the Dark

A hill country witness was being examined as to his knowledge of a shooting affair.

"Did you see the shot fired?" the magistrate asked.

"No, sir, I only heard it," was the evasive reply.

"The evidence is not satisfactory," replied the magistrate sternly. "Stand down!"

The witness turned round to leave the box and directly his back was turned he laughed derisively.

The magistrate, indignant at his contempt of court, called him back and asked him how he dared to laugh in court.

"Did you see me laugh, Your Honor?" queried the offender.

A hillbilly had worked up quite a business pulling cars out of a mud hole in front of his house. But one day a motorist got stuck and burned out his car's clutch trying to get out. So the hillbilly hitched his mule to the car and spent a whole day towing the motorist to the nearest garage. When he returned home, his wife asked him how much he had charged for the tow.

"Fifty cents," was the answer.

"Well, said his wife, "next time you better do the pulling and let the mule handle the business end!"

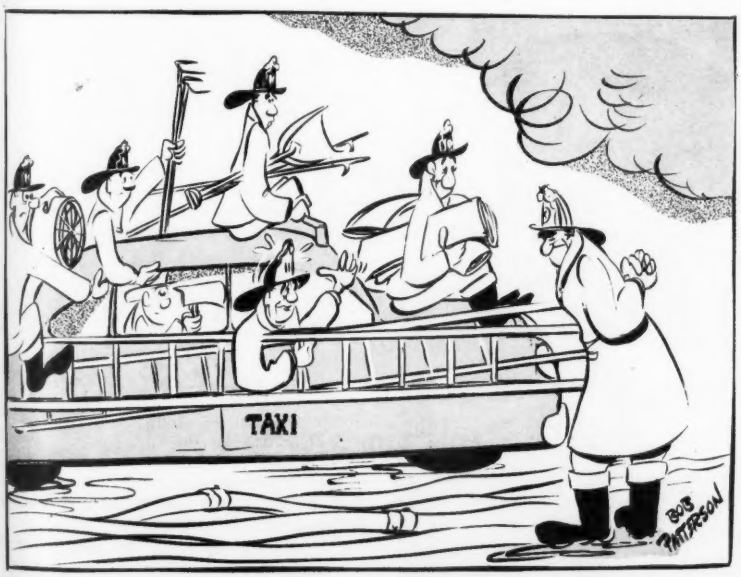
From the review of a summer stock production: "Mr. Jones played the drunk in 'The Face on the Barroom Floor' so realistically that you could smell his breath in the back row of the theater."

Friend: "Does your husband still find you entertaining?"

Wife: "He almost did last nite, but from now on I'll be more careful."

The Fireman had just caught his small grandson up to his ears in mischief. "Bobby," he asked, "how do you expect to get into heaven?"

Bobby thought a minute and then replied, "Well, when I get there, I'll just run in and out and in and out, and keep slamming the door until some angel says, "For goodness sake, Bobby, either come in or stay out!" Then I'll go in and stay."



"Remember that tricky turn at 7th and Alameda?"

Two farmers at a Dublin fair were fascinated by a booth where little celluloid balls bobbed on top of water jets. Customers were offered substantial prizes if they succeeded in shooting any of the balls off its perch. One of the Irishmen spent six shillings in a vain attempt to pick off one ball. Finally his friend pushed him aside and picked up the rifle.

"Watch how I do it." He took a single shot and all six balls disappeared. As they walked away from the booth laden with prizes, the unsuccessful one marveled. "However did you do it, McHugh?"

"It just took knowing how," explained McHugh. "I shot the man who was working the pump."

Reverse English

The municipal Council of Ku-ring-gal, Australia justified a request for funds to purchase a new fire engine with the statement:

"Our old fire engine is so beat up that sometimes only reverse gear is working. Often it has to be driven to fires backwards!"

Father: "I don't believe I approve of these one-piece bathing suits."

Daughter: "Oh, I think a girl should wear *something*!"

We kinda like the one about the Scotchman who bought his wife a set of paper plates and an eraser.

Space Flight

Old Timer: "I don't like the fellows in that engine house."

Buff: "And why not?"

Old Timer: "Because they just threw a party downstairs!"

Buff: "And what's wrong with throwing a party?"

Old Timer: "I was the party!"

The new suburbanite stood by the backyard fence, talking to his neighbor. "You know," he said, "when I started this vegetable garden, I told my grocer that in a few months I wouldn't be complaining any more about his high prices."

"And are you?" the neighbor asked.

"No," came the wry rejoinder. "Now I can't figure out how he can manage to sell so cheap."

Thought for the Month

There was a time when a fool and his money were soon parted. Now it happens to everybody.—*Art Schuelke*

Husband-hunting is probably the only sport in which the animal that gets caught has to buy a license.

WHAT'S NEW

Among the Manufacturers

- products
- processes
- personalities

New Owners for Ward LaFrance

A group of private investors headed by Harris J. Klein, a New York attorney and industrialist, has announced it has entered into a contract to purchase the assets and business of Ward LaFrance Truck Corp., Elmira, N. Y., from the Glen Alden Corporation.

Mr. Klein said that under the purchase agreement the new owners will take over all of Ward LaFrance's manufacturing, sales and service facilities, and that the company will continue to operate under its present name. The new owners will meet next month to elect a board of directors and a president. John R. Stone, formerly works manager of the York Hoover Corp., has been named vice president-operations, and P. A. Jenks, formerly project coordinator for Ward LaFrance, has been appointed general sales manager. Other administrative officers will be invited to remain with the company.

Antarctic Alarm System

A completely automatic fire alarm system designed and built by the Gamewell Company, Newton Upper Falls, Mass., for the U. S. Navy Operation "Deep Freeze" at McMurdo Sound, Antarctica, will protect irreplaceable equipment as well as human lives. Recently delivered, it will supervise 54 automatic fire detector circuits located throughout buildings in the base camp.

New Ansul Test Station

Towering pillar of smoke rises from fire at new test station built by Ansul Chemical Company near Marinette, Wis. Ansul, a pioneer manufacturer of dry chemical fire extinguishing equipment, initiated the field with tests of an air crash fire truck with a dry chemical ca-

pacity of 4,000 pounds. A total of 800 gallons of gasoline was spilled on a clay area about 100 feet in diameter for this particular fire. The new test station, covering about 12 acres, is ideal for testing large-capacity extinguishing equipment because of its size.

McCulloch Power Chain Saw Demonstrated

A McCulloch chain saw, operating in foreground, swiftly and smoothly opened three 14-inch by 4-foot vents in roof structure sections constructed according to building code specifications, at the IAFC conference in Los Angeles. In slightly over two minutes, the time the saw required, the axe-men barely penetrated the paper covering and the 2-inch wood sheathing.

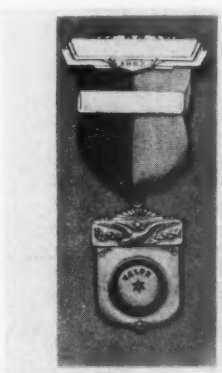
Maxim Apparatus for Korea

Bradford Gifford, delivery engineer for the Maxim Motor Company, Middleboro, Mass., says goodbye to Ben Lewis, sales manager, as he boards a "Mainliner" at Boston for a 9,000-mile flight to Korea.

Mr. Gifford will instruct firemen in various cities of Korea in the proper use of the six new Maxim fire trucks just delivered. His assignment, estimated to consume a month, is one which should prove interesting not only to him but also to fellow firemen in Korea.

Introduces Novelty Line

Known chiefly for the manufacture of badges for over 105 years, V. H. Blackinton & Co., Inc., Attleboro Falls, Mass., has recently introduced a line of business gifts, novelties, premiums and sales in-



centive awards designed to fulfill a definite need for this type of merchandise. Also introduced as a part of this line, is a completely new assortment of special medal citations for service, achievement and valor for firemen, policemen and others. Appropriate engraving and city colors are available.

Kidde Expands

Formation of the Kidde Ultrasonic & Detection Alarms, Inc., a wholly owned subsidiary of Walter Kidde & Company, Inc., has been announced by Paul W. Eberhardt, vice president and general manager.

The new company is located at 9 Brighton Road, Allwood, N. J., and manufactures and sells photo-electric and ul-

What's the difference between EUREKA Multiple-Woven and plain "circular-woven"?

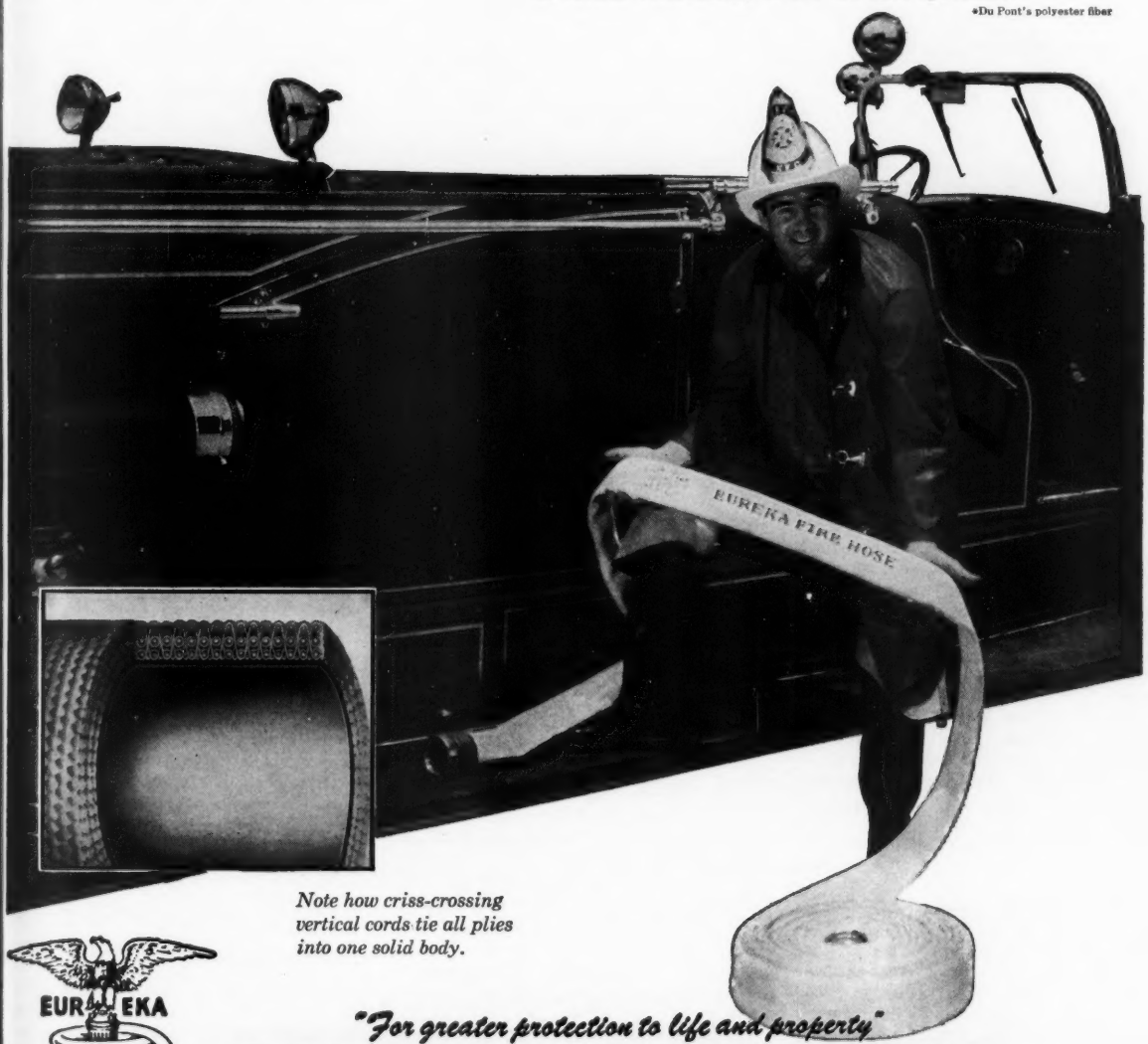
Most fire hose is "circular-woven", one ply at a time. Only Eureka furnishes *multiple-woven* hose.

Want to see the difference? Look at the cross-section of a Eureka multiple-woven hose. Notice those cords running up and down through the plies! You'll find them only in *multiple-woven* hose. The unique Eureka loom not only weaves all plies simultaneously but also weaves through them these additional warp threads that bind together the filler cords of *all* plies into a single homogeneous jacket. Result:

- Greater strength from the same weight of materials,
- No space between plies to collect dirt and moisture,
- Longer, safer service life,
- No writhing under hydrostatic pressure.

Built to withstand pressures of either 400 or 600 pounds, Eureka Multiple-Woven Hose—with filler (circular) cords of cotton or Dacron*—can be furnished in all standard diameters. Your Eureka representative will gladly give you all details. Remember, he is a fire hose specialist!

*Du Pont's polyester fiber



Note how criss-crossing vertical cords tie all plies into one solid body.

EUREKA

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

1 Market Street • Passaic, New Jersey

Division of United States Rubber

trasonic burglar detection equipment formerly handled by the parent company's Ultrasonic Division as well as Atmo rate-of-rise and Fyrindex spot fire detection devices formerly supplied by J. H. Scharff, Inc.

The New Haven, Cincinnati, Detroit and Los Angeles sales and service offices formerly operated by Scharff and Ultrasonic will continue to be maintained by Kidde Ultrasonic & Detection Alarms, Inc.

Appointments and Promotions

W. Ben Flanigin has been appointed general sales manager of The Gamewell Company, Newton, Mass., it was announced by G. A. Swim, president. He has been serving as eastern regional sales manager in Gamewell's New York office.

Mr. Flanigin, an electrical engineer, joined the company in 1946, following his release to inactive duty by the U. S. Navy, where he served as an electronics officer. Before being transferred to New York in 1955, he was a sales engineer in the Chicago office and was named district manager for that area in 1952.

Don C. Livingston has been named manager, two-way radio sales, of a 10-state southern area by Motorola Communications & Electronics, Inc., 4501 West Augusta Blvd., Chicago 51, Ill. He was formerly regional manager of Kansas-Missouri and southern Illinois. The newly created position covers an area bounded by New Mexico, Oklahoma, Arkansas, Tennessee and Georgia, with headquarters in Dallas, Texas.

William H. Hawks, formerly zone manager in Kansas City, Mo. has been named regional manager to succeed Livingston in the Kansas-Missouri area.

Mr. Arthur W. Sellers, general sales manager, R. D. Werner Co., Inc., New York 16, N. Y., has been named vice president, sales. In his new capacity, he will direct sales and supervise special promotions of the entire line of Werner aluminum ladders, staging and other products.

W. R. Manson has been elevated to vice president in charge, research and development, at the Werner factory in Greenville, Pa. Mr. Manson has been serving as plant manager.

R. L. Dickson has been elected executive vice president of Walter Kidde and Company, Inc., Belleville, N. J., it was announced by John F. Kidde, company president.

Mr. Dickson is a member of the Kidde board of directors and has served as administrative vice president since 1957. Previous to that time he has been vice president and controller.

He is president of the Controllership Foundation, Inc., and a member of the Finance Planning Council, American Management Association.

Joe L. Risinger, one of the country's foremost authorities on industrial fire protection, has been retained as a consultant by Safety First Products Corporation, Elmsford, N. Y. While continuing his active participation in the American Petroleum Institute and National Safety Council, and independent consulting, he will serve Safety First exclusively in the fire extinguisher field for studies of fire protection problems in refineries and petroleum operations, chemical plants and other industrial installations.

Mr. Risinger has served as chairman of several safety and fire protection committees, American Petroleum Institute, and as a member of the board of directors of the National Safety Council. He was formerly in charge of safety and fire protection for Socony Mobil Co.

Roscoe H. Garrett has been appointed sales manager for the Scam Instrument Corporation, 1811 West Irving Park Road, Chicago 13, Ill., manufacturers of industrial monitoring systems. A registered professional engineer, he brings a versatile electrical background to his new position including 15 years with the Dynamic Division, Eaton Mfg. Co., Kenosha, Wis., where he was chief electrical engineer, and in engineering and sales with the Selcon Division, Diversey Corp., Chicago.

Barney D. Wilmoth has been appointed field engineer for Clifford B. Hannay & Son, Inc., Westerlo, N. Y., manufacturers of hose reels, according to George A. Hannay, vice-president of the concern. Wilmoth, who flies his own airplane while on business trips for Hannay, will specifically serve the east central and midwest districts, but will be available for calls anywhere in the United States and Canada.

Levitt-Safety, Ltd. has taken over distribution of Ansul dry chemical fire equipment for the entire Dominion of Canada. Levitt has been Ansul's distributor in eastern Canada for the last 12 years. Its headquarters are at 747 Vaughan Road, Toronto. The new western office will be at 10205 105th Avenue, Edmondton 5, Alberta.

FWD Name Change

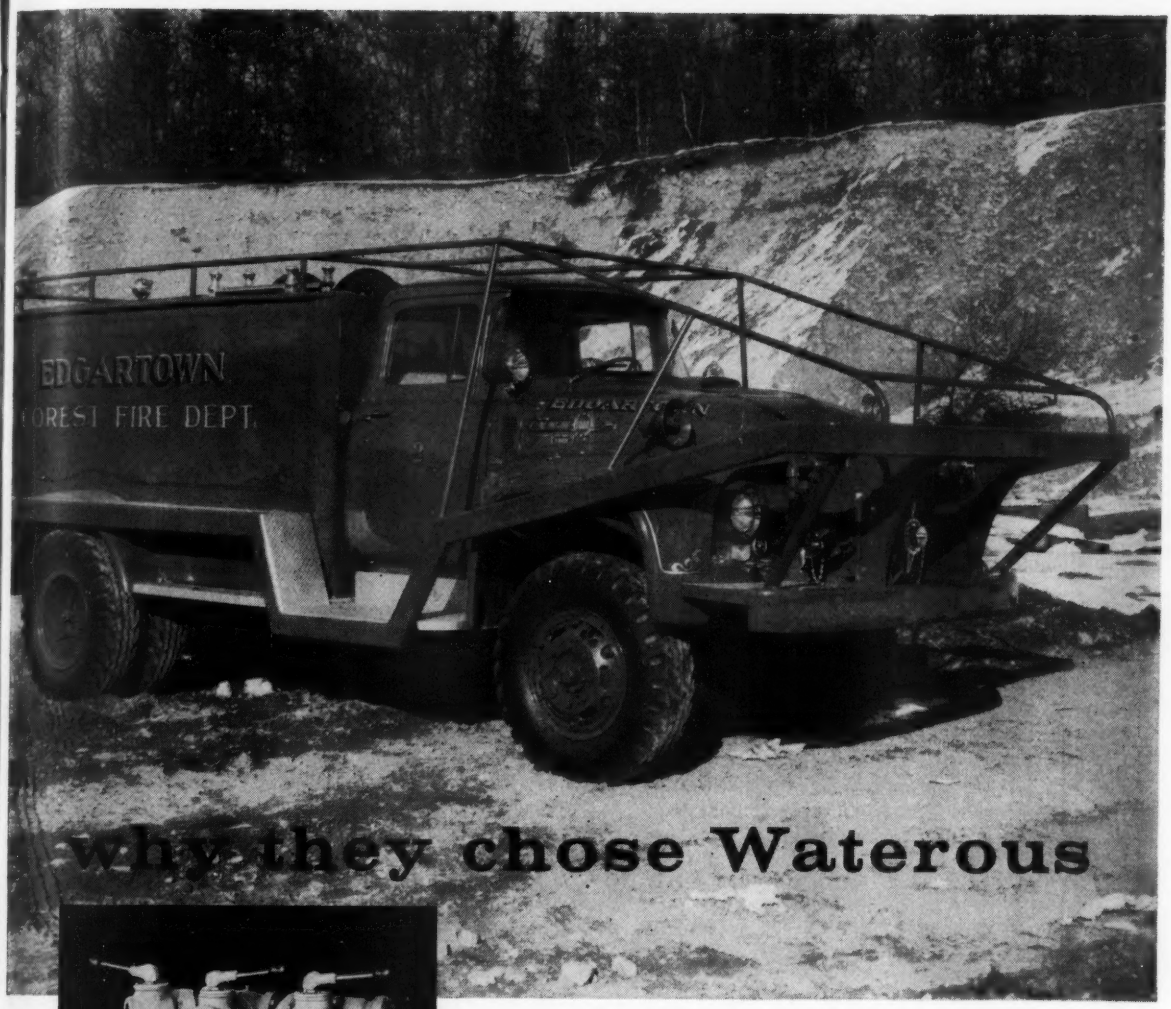
The Four Wheel Drive Auto Company, Clintonville, Wis., has celebrated its 50th birthday by changing its name to FWD Corporation. Stockholders voted to adopt the new name at their annual meeting. The name was changed in order to avoid misleading connotations of the old name.

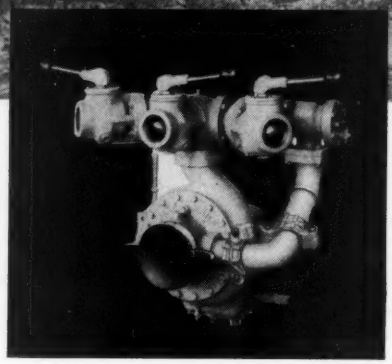
New Dacron Industrial Hose

An industrial fire hose which, it is claimed, can be soaked continuously in mud holes, strung out in the dankest part of an underground mine for months at a time, or hung in an atmosphere heavy with acid fumes—all without hurting the hose—is announced by B. F. Goodrich Industrial Products Company, Akron, Ohio. The new "Imperial" hose, made with an all-Dacron single jacket, was originally designed for heavy-duty service in oil refineries and chemical plants. After discovery of its unusual qualities, the company is now recommending the hose for fire service in the contracting and mining industry, in general industrial plants, and on board ship for washdown service. The 500-psi test hose is said to outlast conventional single-jacket hose seven to one and rubber-covered hose three to one. It is available in 1-inch, 1½-inch and 2½-inch sizes.

Mobile FM Receivers

Two new 12-volt mobile FM receivers for monitoring any single frequency in the 30-50 or 152-174 MC bands are available from Monitoradio Division, I. D. E. A., Inc., 7900 Pendleton Pike, Indianapolis 26, Ind. The receivers feature crystal controls, built-in squelch, 4-inch pm speaker and may be easily installed in car or truck. □□





Model CF-4 pumps more gallons per minute than any other service-proven, front-mounted pump

WATEROUS' front mounted CF-4 has a 750 GPM Class A Fire Underwriters' rating. Its three 2½" lines for structural fires mean lower insurance rates in most communities.

The CF-4 is a simple, compact unit that can be front mounted on any standard truck chassis. Its impeller shaft assembly is ball bearing-mounted—hydraulically and mechanically balanced to operate smoothly over its entire range—makes use of the truck engine's coolant for winter heating. An over-center, single-plate dry clutch permits positive engagement or disengagement at any engine speed. It's just like the clutch in the truck itself.

Where the advantages of a front-mounted pump are desired, the CF-4 provides superior performance and unmatched reliability.

For complete information on the CF-4 and other WATEROUS fire pumps write:

WATEROUS *80 E. Fillmore Ave., St. Paul, Minnesota, Dept. 309*

UNOX®

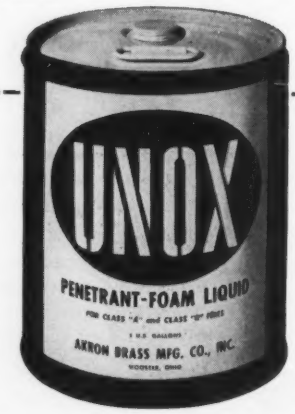
the **4** *Dimensional Foam*

1 SMOTHERS AS A FOAM
Actually "chokes fire to death" by cutting off all air with a thick blanket of small-bubble foam.

2 SPILL FIRES QUICKLY COVERED and controlled. UNOX foam travels rapidly over the whole fire.

3 PENETRATES AS "WETTER WATER"
Unequalled as a penetrant of burning mattresses, cotton bales, charred wood and similar water-repellant surfaces. Goes to the heart of the fire where combustible gases are forming, and kills it!

4 COOLS Absorbs heat like a sponge.



UNOX® *foam is now being used with Akron's Automatic Turrets at Missile launching sites and at plants of the Atomic Energy Commission.*

UNOX® *is a registered Trade Mark of Union Carbide & Carbon Corp.*
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is sole international distributing agent.

Only **UNOX**® *has all of these features:*

Foams in any water, brackish, hard, soft or sea water. Improves the efficiency of any available water as an extinguisher for Class "A" or "B" fires.

Less water needed, because UNOX foam improves the fire fighting effectiveness of water, then breaks down into "wetter water" and keeps working. You need much less water than you'd expect to use.

Expands tanker fire-fighting ability 8 to 10 times. With limited water supplies UNOX will expand your fire-fighting ammunition 8 to 10 times.

Less water damage with UNOX foam. First of all, you're using less water; second, UNOX penetrates. Your fire's out faster.

Economical—a little UNOX goes a long way. 2% UNOX makes foam—1% for wet water. 2 to 3 times as potent as ordinary foam.

Safe to use, non-toxic. Requires little clean-up because it leaves no residue.

Protects objects exposed to fire by forming a thick insulating "blanket," even on vertical surfaces.

Concentrate won't freeze, stands temperatures as low as —20 degrees F.

Won't deteriorate in storage, your supply is always ready to use.

Underwriters' Laboratories approved and listed.

Your UNOX foam team:

For tougher, quick-acting foam or wet water. 1,000 gallons of water will produce up to 10,000 gallons of fire-fighting foam with UNOX.

UNOX *plus* **IN-LINE** *or* **BY-PASS EDUCTOR** *plus* **IMPERIAL NOZZLE**

QUANTITY	Montana, Wyoming, Colorado, New Mexico and East	Idaho, Utah, Arizona and West
5 gal. cans	$4.75 gal.	$5.15 gal.
30 gal. drums	4.50 gal.	4.90 gal.
55 gal. drums	4.00 gal.	4.40 gal.

Freight allowed on 10 gallons or more.

Akron Brass Mfg. Company, Inc., Wooster, Ohio

AKRON BRASS
FIRE FIGHTING EQUIPMENT

Get smoke out, get air in

with Multi-Purpose

SUPER VAC

CONTROLLED VENTILATION UNITS

NOT JUST A FAN... but a powerful vacuum-action air screw... Super Vac is amazingly simple in operation, made possible by the efficient design of the **powerful propeller** that is the heart of the unit. This patented propeller produces 100% pulling or blowing power over its entire surface.

Proved method of saving lives while also reducing smoke damage

Fire departments **nation-wide** attest to the speed with which Super Vac provides **controlled ventilation**... so necessary in modern fire fighting. This multi-purpose unit primarily (1) gets rid of smoke and fumes through its powerful vacuum action... or, (2) furnishes a tremendous blast of fresh air into the smoke-congested area, reducing the dangers of combustion and asphyxiation. Although one unit is often sufficient, **complete controlled ventilation** can be more speedily accomplished by using two or more units... one or more units **pulling out the smoke and fumes** while the remaining units **blow in a steady supply of fresh air.**

★ **Highly portable... operates in any position**
★ **Design permits vertical stacking**
★ **Made in 16" and 24" sizes**
★ **AC or DC, regular or explosion-proof motors**
★ **Choice of red or white baked enamel finish**
★ **Running board mounts available**

For complete details and specifications on

... contact your fire equipment dealer

... or write manufacturer

SUPER VACUUM

SUPER VACUUM MANUFACTURING CO., Inc
319½ East Seventeenth Ave., Denver 3, Colorado

COLONIAL WILLIAMSBURG

Continued from page 109

occurs and response of fire department personnel and equipment within a two-minute period.

Since 1950, this philosophy has paid off extremely well. Fire damage to Restoration property has been kept to less than $100.00. This is a remarkable low loss when one considers the huge value of the property involved and the thousands of visitors who pass through or occupy the buildings monthly. "The important element, of course, is a prompt fire warning," Jayne states.

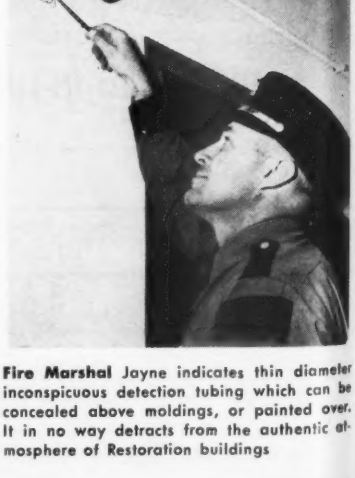
To accomplish this, Colonial Williamsburg installed Kidde-Atmo fire detection systems in many Williamsburg properties. Throughout the buildings, inconspicuous, thin-diameter copper tubing is mounted. It passes through every room and because it can be concealed above moldings, painted over, or otherwise concealed, it in no way detracts from the authentic atmosphere of the building.

When a fire occurs, the rate-of-temperature-rise causes air in the tubing to expand. This pneumatic impulse traveling in opposite directions enters a detector and forces a bellows-like device to close. This completes an electrical circuit and causes an alarm to sound locally and at fire headquarters.

If commercial electrical power should fail, the fire detection system will still operate. It draws power from 24-volt d.c. batteries, said to be good for 75 hours, which are constantly being recharged by an inverter attached to a normal AC power line.

Campbell's Tavern Fire

One incident which demonstrates the value of this type of detection system occurred in Campbell's Tavern. Fire broke out in the highly valuable Restoration building after closing. Because of the value of its furnishings and other



Fire Marshal Jayne indicates thin diameter inconspicuous detection tubing which can be concealed above moldings, or painted over. It in no way detracts from the authentic atmosphere of Restoration buildings

esthetic considerations, it is unsprinklered and an immediate indication of "trouble" is vital.

At 11:51 p.m. on September 16, 1957, the alarm buzzer sounded at the municipal fire station. Assistant Fire Marshal Robroy McConnell noted the detector indicator panel flash red for fire at Christiana Campbell's Tavern and Coffee House. Within 10 seconds he had dispatched the apparatus and then notified every member of the department by means of radio.

At 11:53 p.m., Marshal Jayne directed the first-arriving companies to force a window and enter the building. The fire was quickly located in a large hamper of soiled linen. A portable pressurized water extinguisher removed from a nearby wall bracket had the incipient blaze under control in seconds.

"It is tragic," Fire Marshal Jayne says, "that large-loss fires in commercial properties are reported daily. The installation of fire detection equipment should slash the huge dollar loss, not to mention loss of life, to a fraction of its current annual figure. In addition to the very low cost of the detection equipment, as compared to the value of the property protected, in many cases it affords an insurance premium reduction which permits it to be amortized over a few years period." □□

PROTECTING OUR HERITAGE

Continued from page 109

wooden beams are often part of the complete structure, a far cry from present-day standards. Some locations continue to use original fireplaces or other heating devices without consideration of current methods.

When a complete restoration is being planned, modern engineering practices may be incorporated without disturbing the architectural decor of the structure. However, planning alterations can be most difficult and requires special treatment agreeable to both the architect and the fire protection engineer in order to accomplish a fire-safe design and installation.

In many instances the paints used within the buildings or on the decor can be of a flame-retardant material. Much progress has been made in recent years in the development of flame-retardant coatings. These should be explored by those responsible for fire safety.

One of the unique problems presented to those who rebuild historical structures is that of hidden stairways and other concealed spaces which make good passages for flame and hot gases. Such areas require close attention by the fire protection engineer.

The majority of such buildings I have visited contained substandard electrical installations. In some instances the wiring was a half-century old or more. These and indeed, many installed only 25 years ago are not considered adequate according to today's standards.

It has been my observation that many of the historical shrines along the eastern seaboard are located in areas remote from adequate fire fighting facilities or in com-

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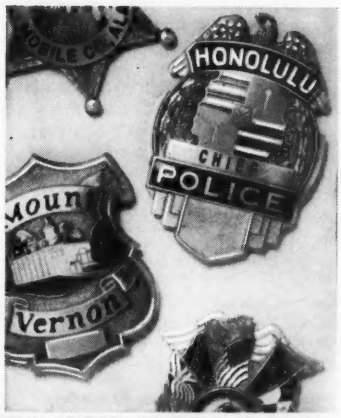

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munities containing poor water supply. There is little evidence that proper fire inspections have taken place. In one instance, the hand extinguishers had not been checked or refilled for nine years. Safe practice dictates that such equipment be serviced annually. Still another extinguisher in the same building had a discharge hose that would have broken in the operator's hand. None of the exits was marked and the alternate egress door was locked.

In a public park in one of the eastern states, I observed an installation where three 1-gallon bottles of carbon tetrachloride were provided to protect some 36,000 square feet in an early stone structure. On the same reservation, ten 1-quart overhead ceiling bottles of carbon tetrachloride were used in various outbuildings, but no approved appliances were observed.

In one building where valuable original documents are displayed, only vaporizing-liquid-type fire extinguishers are provided even for Class A fires, for fear the use of pressurized water or soda and acid extinguishers might damage these papers.

Where high-value irreplaceable records are located, these should be arranged in small areas so that effective protection of automatic carbon dioxide smothering systems can be made available.

At a museum housing antiquities of early fire fighting forces and railroad artifacts, a brick joist structure was lacking first-aid fire appliances, even though no fire department or water supply facilities were available.

In one restoration of great historical significance, the work of reconstruction is going ahead as fast as funds can be obtained. It will be regrettable if this effort is of no avail. Two flagrant violations of standard safe practices were observed. One home contained a soda and acid fire extinguisher which carried an inspection date of April 1953. This extinguisher would, no doubt, have failed if it had been needed. At the replica of another building, located on the top of a hill, several hundred feet of 1½-inch fire hose was piled haphazardly against the side of the building. There was no hydrant or water supply within 800 feet.

Serious consideration should be given to installation of an adequate water supply and an approved sprinkler system together with hydrants in order to provide an effective weapon. A properly engineered sprinkler system is a first-line defense against fire. Some properties observed are in such remote areas that sprinklers will be their only protection. Such installations have a direct bearing on the cost of any insurance coverage on the property.

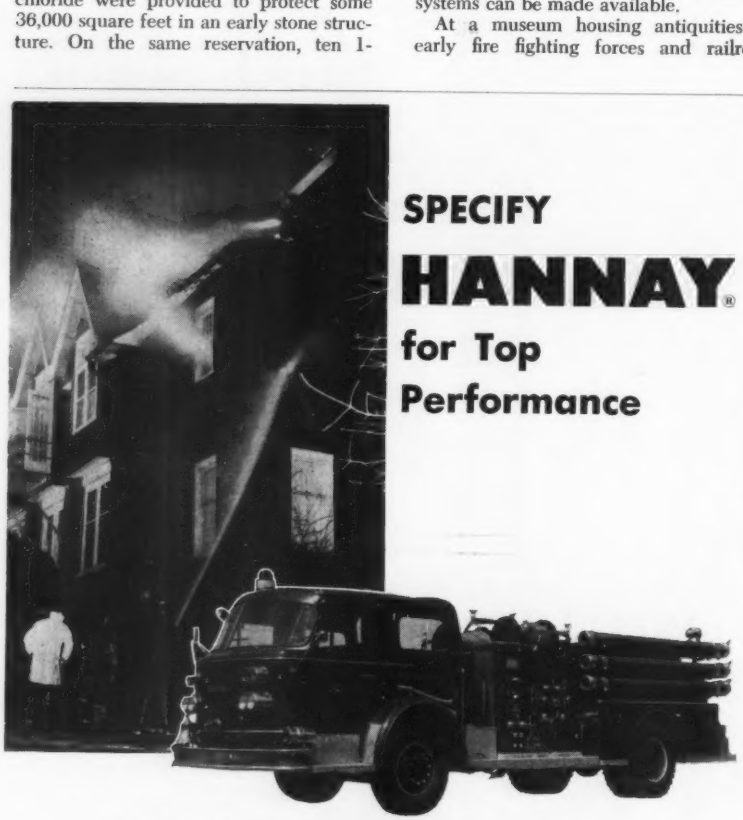
In locations where adequate municipal fire fighting facilities are available, an automatic fire detection system should be installed with a direct connection to the local fire department. Through the use of supplementary devices on an automatic sprinkler system, the fire detection circuits may also be used to transmit a sprinkler malfunction or operation alarm.

To provide continuity in the program set up by the fire protection engineer and management, a monthly self-inspection report of the premises should be made by a member of the maintenance staff.

Employees should be trained in the art of good housekeeping, including the removal of all unnecessary combustible material from the premises, on orderly arrangement of necessary storage, use of

About the Author

Mr. Jebens is chief fire protection engineer for The Borden Company, New York. He lives in Babylon, Long Island, and is active in the fire department. After serving as a Marine fire marshal, 3rd Coast Guard District, during World War II, he joined Borden's Safety and Fire Prevention Department in 1945. He is chairman, Educational Committee, Metropolitan Chapter, American Society of Safety Engineers; associate member, Society of Fire Protection Engineers; member, International Association of Fire Chiefs; represents Borden on the Executive Fire Committee, Society of the Plastics Industry and is a member, Committee on Museums, Libraries, and Historical Buildings, NFPA.



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HANNAY®
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HANNAY REELS *SPECIFIED* for New American LaFrance Pumpers in Watkins Glen, N. Y.

No other hose reel is specified as often as the HANNAY hose reel, because no other hose reel is designed, built and tested by active, working firefighters. For the finest, most dependable fire hose reel, be sure you SPECIFY HANNAY.

Twin Hannay reels with explosion-proof electric rewind motors, auxiliary crank rewind and chrome roller assembly.

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Hose Reels by HANNAY®

CLIFFORD B. HANNAY & SON, INC., WESTERLO, NEW YORK

non-flammable solvents and liquids and disposal of materials subject to spontaneous ignition.

Employee indoctrination in the fighting of incipient fires must be carried out. The first obligation is to call the fire department if one is available. The handling of standpipe and hose installations together with supplementary fire extinguishers is included as a part of this instruction. If a fire department is not readily available, employee indoctrination will also include operation and use of fire pumps and allied equipment from local water supplies. Such training is available today for the asking in most areas, through state or municipal agencies charged with the instruction of fire department personnel.

Executive personnel must recognize the value of cooperation and liaison between the local fire department and their own organization. Frequent drills and inspections may often be the difference between a well-fought fire and a heavy loss.

The re-creation of antiquity and what it stands for is to be admired. But, like many of us, those responsible become so enthused and wrapped up in their project that they feel "nothing can happen here." They fail to notice that loss by fire has already destroyed many cherished edifices.

It is a common argument that fire prevention and protection is costly but when, for a few thousand dollars, much priceless art and treasure of the past can be preserved for future generations, the investment is well worth its while. Although an insurance company will provide coverage for most types of losses in the fire field, history still remains the vast heritage of our country which cannot be replaced with a policy. Built-in protection features, non-human automatic detection and adequate training in prevention and suppression have no substitute. □□

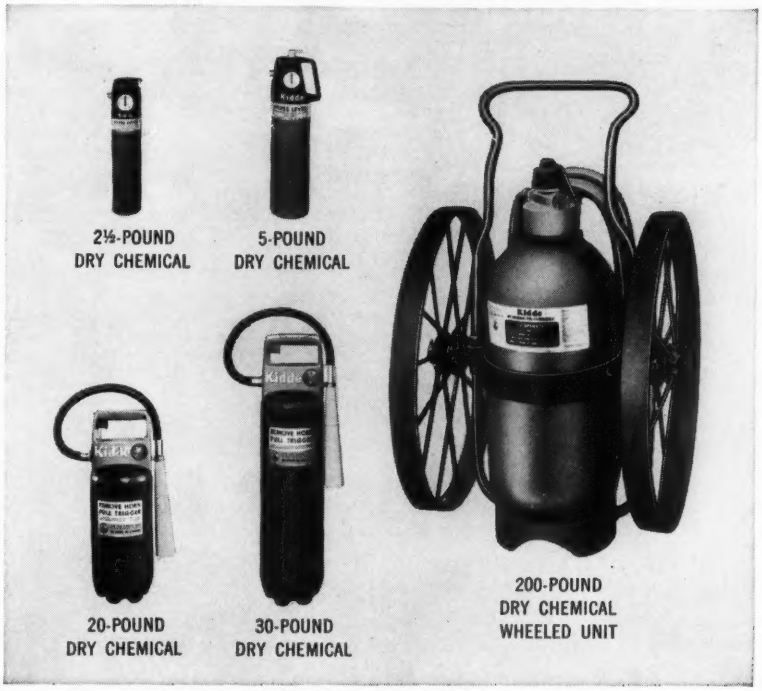
Air-Crash Training

Interested in learning about air crash fire fighting? If so, the Air Force Reserve offers a program which involves two weeks of fire fighting training each year at larger air bases. Weekly or monthly meetings are not required; the only other participation needed is for the reservist to accomplish 20 units of correspondence courses during the year.

The 15-day training period may be taken at any time during the year which is convenient to the individual; it will not detract from normal vacation allowances since by federal law, employers are required to grant reserve training periods in addition to the regular annual leave. This reserve training also contributes to a retirement program.

Fire fighters interested in details about this Air Force Reserve program, and who have had prior military service, may contact the Reserve Affairs or Reserve Personnel Section at the larger Air Force bases nearest your address. Inquire specifically about the "Part I" reserve training program. *—Edward M. Parr*

Now! FULL-POWER Fire Fighting with this complete dry chemical line!



Kidde top-rated portables and wheeled units kill more fire... faster!

From the powerful new 2½-pound portable, on up to the giant 200-pound wheeled unit, Kidde dry chemical extinguishers pack the *extra* punch needed for stubborn blazes, for *full-power* fire fighting. Available in pressurized 2½, 5, 10, 20 and 30-pound capacities, Kidde dry chemical portables feature simple, one-two operation, are easiest of all portables to operate, even while wearing gloves. Kidde portables have no valves to turn, no pins to pull, need no bumping or inverting. Just aim, pull trigger, and fire's out! All are quickly and easily pressurized, have dust- and moisture-proof gauges which show at a glance when unit is charged.

The 200-pound Kidde pressurized wheeled unit discharges a 40-foot dry chemical stream faster, has an *extra* 50 pounds of fire-smothering dry chemical to knock down fire quicker. It's faster and easier to operate... just remove pin, swing toggle lever, and flip on-off lever. Easy to maneuver because of its low center of gravity and larger wheels. Truly a one-man fire engine!

All Kidde extinguishers are granted top rating by Underwriters' Laboratories, are the finest extinguishers on the market today. Get more information about this *complete* line of *full-power* fire fighting equipment. Write to Kidde today!

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Walter Kidde & Company, Inc.
233 Main St., Belleville 9, N. J.
Walter Kidde & Company of Canada Ltd.
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No lubrication necessary
Carbon bearings (oilless)
Bronze spur gears (Oberdorfer alloy No. 16438)
No. 26 Pump
Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)

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OBERDORFER

BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES —No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

The Very Finest

AKRON BRASS

BRASS NOZZLES & FITTINGS FIRE FIGHTING EQUIPMENT

SOLD IN SOUTHERN CALIF. BY HALPRIN SUPPLY

IMPERIAL, PDQ, AKR-O-JET

A Nozzle for Every Purpose!

SEND FOR OUR COMPLETE CATALOG M-300

HALPRIN SUPPLY CO.

1355 South Flower St., Los Angeles 15, Calif.

RADIATION HAZARDS

Continued from page 112

active material which may be deposited on surfaces in the area.

Internal radiation

We have seen that the external radiation hazard to fire fighters is not a serious problem except in a few cases which can be easily prepared for in pre-fire planning. The chief hazard of radiation to the fire fighter is the possibility of getting radioactive material into the body. This problem arises primarily in plants where radioactive materials are processed and in laboratories where they are placed in solution. During a fire, the materials may become airborne, and be breathed in or swallowed by fire fighters.

Radioactive materials in the body can present a serious problem. Many of the materials are not easily excreted and tend to collect in certain radio-sensitive organs. Materials which emit short-range radiation are no hazard outside, but by entering the body may be placed in position to do damage.

Contamination

In normal fire fighting operations, personnel move about freely from the scene of the fire to other necessary locations without question. Where radioactive materials are concerned we must realize that every man is a potential spreader of contamination. For this reason, unless the fire is so severe that the problem of contamination is secondary to saving the building, it would be necessary to divide the forces between those who will be permitted in a contaminated area and those who will perform operations outside.

A control point should be set up to prevent contamination beyond this point. If a man in the contaminated area needs a tool, he goes to the control point where it is handed to him. All equipment which passes in should be kept in that area until checked for contamination.

Water should be used sparingly. If it is contaminated with radioactive particles and allowed to run off beyond the control point, contamination is thereby spread. Any spread is going to add to the fire loss. Damage from contamination is as much a part of the fire loss as smoke and water damage. You will find that many insurance policies do not cover this loss. Your intelligent consideration of this problem will be appreciated by the plant management.

Protection of fire fighters

Where radioactive materials are handled as loose materials rather than in sealed sources, we have two problems in fighting a fire. To prevent the materials from getting into the bodies of our men and prevent unnecessary contamination of our equipment, apparatus and areas adjacent to the fire.

Fortunately, protection against the internal hazards of radiation, from the fire

fighter's point of view is simple. Masks, preferably the self-contained type, are the answer together with a few precautions when we remove the breathing equipment.

The mask should not be removed until after a thorough hosing down after leaving the fire area. With a stream of water from a hose, wash down the mask, helmet, coat, gloves, and boots. Leaving the mask on, remove all the outer clothing, then remove the mask. Leave the clothing and mask in a pile at a designated spot to check for contamination.

Then take a shower with soap and water, rubbing gently but thoroughly all parts of the body and hair, and have a check made to determine whether any radioactive particles remain on the body. These maximum precautions should be taken for fire involving large quantities of dangerous materials and in cases where the degree of hazard has not been determined.

Organization and training

While the officers and men of a fire department must have a good basic understanding of radiation and precautions to be taken, it is obvious that it will be necessary to develop personnel with a better-than-average knowledge of the subject. The first step is to select a man for the job. His duties will include being the fire department's point of contact with all problems in this field.

Depending upon the size of the city, the function might be a part-time job or full time for several men. The men should attend one of the instructor courses offered by the U. S. Atomic Energy Commission. He, or they, should study and digest all of the material provided in that course. He should make contact with the people of the health department who are concerned with this problem. He should acquaint management with where the radiation sources are located. Close liaison should be maintained with the department medical officer.

It should be kept in mind that the user or licensee of radiation material is responsible for it at all times. If a radiation source is lost in a fire or accident, the responsibility for its recovery rests with the user. The fire or police department will undoubtedly be requested to lend assistance.

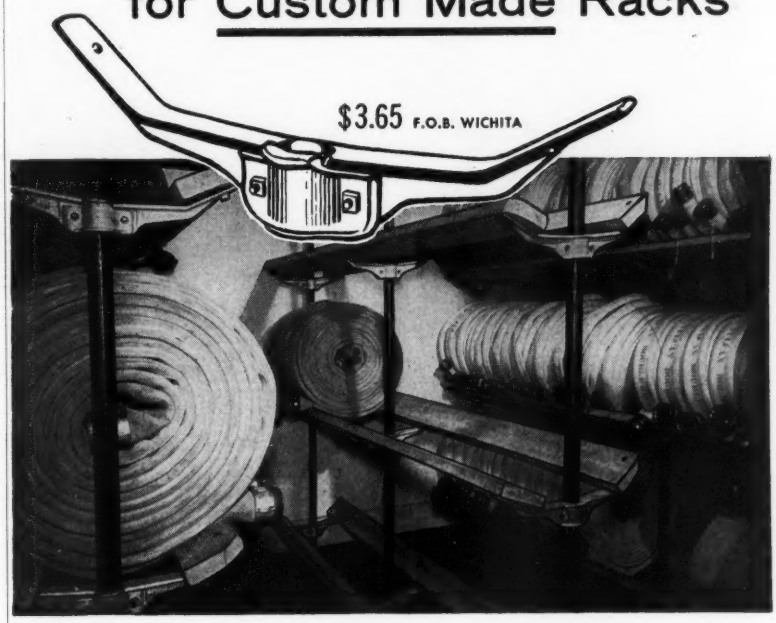
The problems of radiation hazards in fire fighting are a reality. Let us meet the challenge. However, wait until you have the program under way and functioning smoothly before giving it any publicity. Nothing could be more detrimental to the success of the program than to have statements appear in the papers which indicate to the reader the fire department does not know what it is talking about. □□

Every 38 seconds a fire breaks out in some city of the United States, damaging or destroying property and endangering lives.

Hose **BRACKETS**

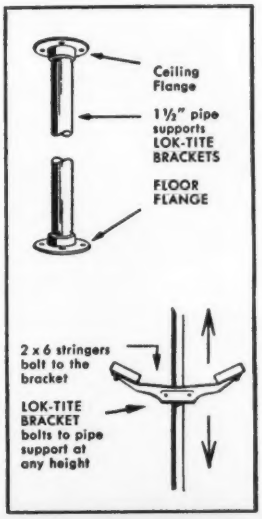
for Custom Made Racks

$3.65 F.O.B. WICHITA



Convert Waste Space To Valuable Storage!

Lok-Tite fire hose brackets provide storage racks in odd dimension areas where ready-made storage will not fit. Encourage good housekeeping practices . . . assure easy hose inspection and correct ventilation by building sturdy storage with Lok-Tite brackets approved by hose manufacturers and fire departments everywhere.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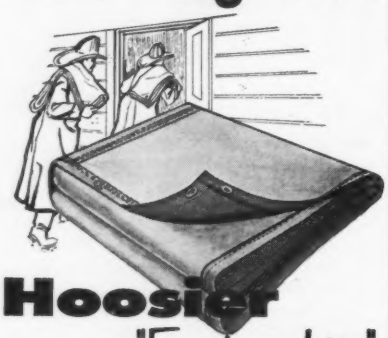

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75% lighter than *wet* canvas, 40% lighter than *dry* canvas . . . a fireman can carry TWO of them up a ladder where he could handle only ONE canvas cover.

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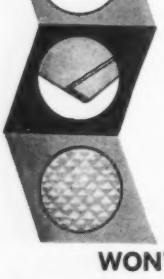

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Chicago Coroner's Jury Makes Recommendations

The special jury impaneled by Chicago Coroner Walter McCarron, following the recent Our Lady of the Angels School fire, has made 21 specific recommendations concerning Chicago's school fire safety and, in addition, suggested nine "recommended good practices."

The recommendations include:

1. Install approved automatic sprinklers in all schools and equip systems with water flow detectors and alarm devices.

2. Enclose all vertical passageways with incombustible construction.

3. Remove all over-door transoms or replace transom glass with wired-glass and nail shut.

4. Install automatic-operating building alarm systems which will alert school occupants and the fire department.

5. Extend public fire alarm system to all schools.

6. In locales where there is no city fire alarm system, a conspicuously marked alarm control or a fire telephone should be placed at the school entrance and connected directly to the fire department over leased telephone lines.

7. First-alarm apparatus and manpower response to all school alarms.

8. Enforce Chicago fire prevention code relating to proper number and correct type of approved fire extinguishers properly distributed in schools.

9. Subdivide hallways over 300 feet in length by swinging smoke barrier doors.

10. Make it illegal to block or wedge open any fire safety doors.

11. Convert gas lights used for exit indication to electric type.

12. Install automatic heat or smoke detection units on intake of exhaust fans and discharge of air supply fans.

13. Prohibit nailing of screens over school room windows.

14. Limit school room occupancy to 20 square feet per pupil.

15. Correct all fire hazards even though not specifically covered by ordinance.

16. Train school personnel in fire safety.

17. Require monthly fire drills without advance notice.

18. Provide proper waste paper disposal.

19. Require that all exit doors open in direction of travel.

20. Cover all combustible trim and acoustical materials with fire-retardant paint.

21. Provide that all legislation relating to fire safety in schools be made retroactive.

The "Blue Ribbon" Jury consisted of the following members: Roy Tuchbreiter, chairman, Continental Casualty Co.; Richard C. Steinmetz, chief special agent, Mutual Investigation Bureau; Dale K. Auck, director, Fire Prevention Division, Federation of Mutual Fire Insurance Companies; Stuart Conlon, president, Bell & Zeller Coal Co.; Edward Fenner, executive secretary, Chicago Truck Drivers and Chauffeurs Union, Local 705; John J. McDonough, senior vice president, Harris Trust and Savings Bank; Lawrence B. Perkins, Perkins & Will, architects; I. S. Lowenberg, Lowenberg & Lowenberg, engineers and architects; John Dolio, partner, Shaw, Metz and Dolio, architects and engineers; Roy G. Benson, secretary, National Safety Council; John A. Ainlay, executive secretary, American Petroleum Institute; Edward J. Wolff, Edward J. Wolff & Associates, consulting engineers; C. M. Varde, insurance consultant; Willard H. Bloch, construction engineer and assistant vice president, John R. Thompson Co.; David S. Klafter, architect; and Walter E. Ericsson, retired general contractor.

Fire Captain Wins Philadelphia Award

Captain John J. Mulderig, Engine Co. No. 5, Philadelphia Fire Department, recently won $20.12 as an incentive reward for suggesting that a fire prevention slogan be printed on the city's paychecks. Along with the cash, he was presented an incentive reward certificate "for contribution of a beneficial idea which has improved operations."

Mulderig was cited for suggesting the message "Stop Fires before They Start" be imprinted on the back of the salary stubs. City personnel officials liked the idea, but will modify it to include similar messages during city-wide campaigns such as "Drive Carefully, Obey Traffic Laws, etc." on future checks going to the municipality's 27,000 employees.

The suggestion program was set up some time ago by city officials and Captain Mulderig is the first fireman to have won the $25 reward. The difference between the announced sum and what the captain received was explained as "that's what's left after taxes."

Among the Buffs

By Paul C. Ditzel

CLUBS LOOKING for new ways to serve their fire departments might steal a leaf from the book of Los Angeles' Box 15 Club.

President Fred Allen of 5127 Tenth Avenue, Los Angeles 43, Calif., says the club is assembling study pamphlets for firemen preparing to take the captain's exam in area departments. The material will be provided free to all firemen.

Fred reports that the pamphlets include NBFU Standards Nos. 19 and 10, dealing with equipment requirements and portable fire extinguishers. Other material includes booklets on the Sanborn maps and one prepared by the Elkhart Brass Company containing an article by Lloyd Layman on the use of water for fire extinguishment. Another study material available will be the inspectors handbook on fire insurance and underwriting, says Fred, who came up with the idea.

Down Baltimore-way, the Box 414 Association's excellent service to the Baltimore Fire Department was rewarded again this year by the Goodman-Gable-Gould Company which donated nearly $1,000 for the continuance of the club's canteen work and other activities.

Company officials, reports Ray Wheatley, editor of *General Alarm*, also have presented the club with another supply of 50,000 cups and 5,000 lids. (Apparently only one of every 10 Baltimore firemen minds cinders floating on the java served to them on the front lines by the club's canteen volunteers.)

At a recent meeting of the Box 414 Association, Battalion Chief Mike Horan thanked the club for its help in making Fire Prevention Week a success, singling out Past President Henry Nathan's work for special praise.

Chief Horan made a statement that, "Since 414's entry into Fire Prevention Week, the program has been better and more effective." What better praise can a fire buff organization receive? The plaudit came from the chief in charge of fire prevention.

Speaking of Baltimore, there's another buff club there that is, according to one of its founders, "Smokestack" Hardy, unique in that it is the first and only all-Negro organization of buffs in the country. Not long ago the club was the subject of an excellent feature story by David L. Maulsby in the *Baltimore Sun*.

Chief Michael H. Lotz, commander of the Baltimore Fire Department, said the club has rendered valuable assistance to the department. The organization, the "Box S.H.C. Association," takes its name from the founders, James N. Smith, Arthur Hardy, and Elbert C. Carter.

Homesickness again creeps up upon me when I hear from Bill Ryan of the Chicago Fire Fans Association that the group held its annual election recently and chose Hy Levine, president; Jim Kirkley, vice president; Jack Richardson, secretary, and Clark Johnson, treasurer.

CHIEF

THIS IS FOR YOU!

The Scott Sling-Pak Speeds up Inspection Speeds up Plan of Attack

- *On In Seconds*
- *Light and Comfortable*
- *Cool Fresh Air—No Chemicals*

Sling-Pak Model 6000-B4A

Chief, this is your personal Air-Pak! It has been designed especially for you. Modern fire-fighting calls for fire attack. This means you must get inside quickly to determine your plan of action.

The lightweight Scott Sling-Pak can be donned in seconds. It gives you a minimum of 15 minutes of breathing protection at extreme exertion. The Scottoramic mask gives you unlimited vision in all directions to help you appraise the situation quickly and make your decisions. Chief, if you haven't tried a Scott Sling-Pak, your nearest Scott Distributor will be glad to show one to you. Use it once and you'll wonder how you ever got along without it.

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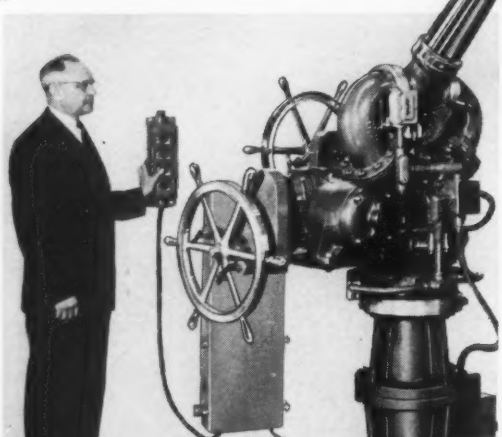
GREENBERG
UNIVERSAL MONITOR NOZZLES

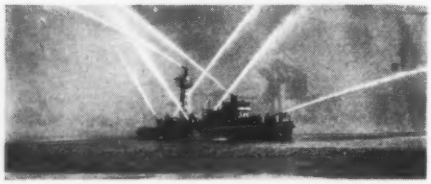


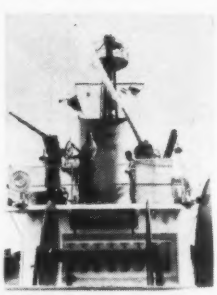
From coast to coast, Greenberg fire protection equipment is meeting the rigid requirements of modern fire fighting methods.

Whether it be monitor nozzles, fire hydrants, couplings or fittings, M. Greenberg's Sons manufacture them in all sizes and to all specifications. Pictured here is the new Greenberg "New Yorker" universal monitor nozzle. Five of these 3000 gallon-per-minute manually operated nozzles are mounted throughout the John D. McKean, with the sixth mounted on top of the fire tower, operated from below by remote control.

Remote (or manual control) New Yorker Universal Monitor Nozzle

John D. McKean, New York City Fire Boat





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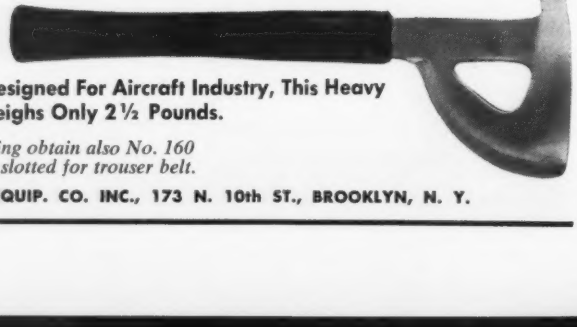

Originally Designed For Aircraft Industry, This Heavy Duty Axe Weighs Only 2½ Pounds.

For easy carrying obtain also No. 160 leather sheath, slotted for trouser belt.

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Retiring president Jim Horan was elected a director along with Warren Doyle and Ed Kessenich.

While the association was in session, two extra alarm fires banged in, one for a tire shop on South State Street and the other four miles north—on the same street the club was holding its meeting. And nobody turned out to these fires, both of which were fought in sub-zero weather. Am wondering from my days as a Chicago reporter and buff when I froze in blizzards at 5-11 and less blazes, whether the Windy City gang is going soft. Someday I'm going back there to live—and find out.

Thanks to all buffs who sent this column Christmas greetings. They included: The Association of Auxiliary Firemen of Manhattan, Inc.; Former Buffalo, N. Y., Fire Commissioner Joe Masterson; West Point Fire Chief George Bertsch; the Boston Sparks Association; Jim Jackson; Edward R. Condrick; Bob Fuller, Fred Allen, and Patty McDonald.

Also: The Los Angeles Fire Department; "Smokestack" Hardy; Jack Robrecht; Tom Edmunds; Bill Wheless, Jr.; Tom Jewett; Ken Tindall; John Lee Turner; Gary R. Pohzehl; Gil Jory; Pfc. Robert E. Schalund, and Al Redles.

Friend Redles reports that he's attended 23,156 alarms throughout the world since he first became a buff in 1925. Al, as veteran readers of this column will recall, keeps a notebook record of his "turnouts" during his trips which take him everywhere in connection with his work. Be sure to call me, Al, when next you're in Los Angeles.

Bernard Grandjany, secretary-treasurer of the Association of Auxiliary Firemen of Manhattan, Inc., reports that John Moore has been elected president for 1959; Rocco DeLorenzo, vice president; and Edward Pospicil, sergeant-at-arms. Member Bill Herries was recently presented with a gold watch by members of Engine 54 for his long and devoted service as an auxiliary captain attached to that company. Bill's brother, Tom, is slowly recovering from a long illness.

That's about the shape of things from sunny, smoggy Los Angeles, and I'll strike it out to take my coffee break: cream, sugar and a lid, please. Keep the anecdotes and news reports coming to me at Box 8731, Crenshaw Station, Los Angeles 8, Calif. □□

Tighten Fire Regulations in Chicago Catholic Schools

Monsignor William McManus, superintendent of Chicago's Catholic schools, has announced that the recommendations of the coroner's jury, which investigated the fatal fire at Our Lady of the Angels School, will be followed in all the city's parochial schools. Installation of sprinkler systems and other major fire prevention improvements will cost between $8 and $12 million.

The ruins of Our Lady of the Angels School will be torn down and a new building erected.

Questions and Answers

K Factor Variation

To the Editor:

Will you please explain the apparent discrepancies between the "K" factors in the table on page 69 of "Fire Service Hydraulics" by Fred Shepperd and the answers received when the formula given on page 80 of the same text is used? The computed factors never agree with those given in the table. O.E.W.

Answer: As stated in the reference text the results when computing a factor by means of formula $D^4 \div 10$ as shown on page 80 will be only an approximation. However, this should not prevent use of the method for finding an answer. An example using both is shown below:

1. A pumper, at 270 psi pressure, is pumping through 700 feet of 2½-inch rubber-lined hose equipped with a 1¼-inch nozzle. What is the nozzle pressure?

(a) Using "K" factor from table:

$N.P. = E.P. \div (1.1) + KL)$
$= 270 \div (1.1 + [.248 \times 14])$
$= 270 \div (1.1 + 3.472)$
$= 270 \div 4.572$
$= 59.05$ psi

(b) Use calculated "K" factor from formula $D^4 \div 10$

$K = 1.25 \times 1.25 \times 1.25 \times 1.25 \div 10$
$= .244$

$N.P. = 270 \div (1.1 + [.244 \times 14])$
$= 270 \div (1.1 + 3.42)$
$= 270 \div 4.52$
$= 59.7$ psi

The difference in this case is only 0.65 psi which is certainly well within acceptable limits.

Sprinklers and Loss of Life

To the Editor:

Recently in a discussion on school safety I made the statement that there has never been a loss of life in a sprinklered building. I was immediately disputed as to its correctness. Can this be proven? T. R.

Answer: Proving a statement of this nature is practically impossible. However, the National Automatic Sprinkler and Fire Control Association states it has no record of loss of life in a completely sprinklered building. In addition, the NFPA recently said it knows of no life loss in a sprinklered school building. □□

New Training Films

The U. S. Navy has announced two new training films, "The Nature of Fire" and "Know Your Fire Hazards," have been added to its training libraries. The new visual aids are in color on 16mm sound film and were produced under the technical supervision of the Bureau of Yards and Docks. Prints of the films may be purchased from United World Films, Inc., 1445 Park Avenue, New York, N. Y.

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It Is EXPENDABLE . . . and EXPENSIVE. **Don't gamble against damage from mildew and rot when, for a nominal investment you can *wash it* thoroughly and uniformly, *dry it* quickly and easily, *store it* safely and conveniently. This . . . is the CIRCUL-AIR "Full Treatment."**

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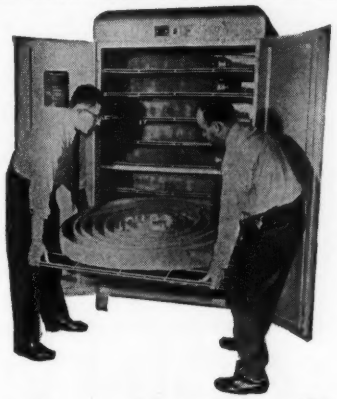
The patented, electrically operated Circul-Air hose dryer circulates prewarmed fresh air through loosely coiled hose at the rate of 5 to 6 air changes per minute. Saves floor space, hard work and lengthens hose life. No other drying method is so fast—so economical—so easy to use. Circul-Air is the preferred drying method in over 5,000 leading Fire Departments.



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Approved by Underwriters' Laboratories . . . and Canadian Standards Association. Recommended by all leading fire hose manufacturers.

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PORTO-RAK *MOBILE* STORAGE AND LOADING UNIT

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NEW *Roto-Jet* HOSE WASHER AUTOMATICALLY WASHES — RINSES — DRAINS HOSE

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the round table

discussion of current fire department and fire management problems

Insignia of the Fire Service

THIS IS THE FINAL installment of the Round Table on the types of insignia used in the fire service.

Next month's question will be devoted to the methods of handling gasoline spills on highways and streets.

Readers are invited to submit comments on next month's subject, as well as on the current one. Address replies to Round Table Editor, FIRE ENGINEERING, 305 East 45th Street, New York 17, N. Y.

The Discussion

John Pavlik, Chief, West Milwaukee, Wis.: The insignia of the chief is five gold bugles. We have no other chief officer ranks in the department.

All department officers wear a single braid on each uniform sleeve, 4 inches from the end of the sleeve at the cuff. The chief wears a gold braid, while all other officers wear a silver braid.

The department issues a service star to each member upon completion of five years of service. This continues throughout the member's service on the department at each five-year sequence. The star is silver in color, and is worn 5-inches from the end of the sleeve at the cuff. The star is silver in color so that in the event of any future promotion, it does not clash with the officers' braid. The stars on the chief's uniform are gold in color, to conform with the rest of the uniform, such as buttons, badge, and stripe.

At the present time, no type of insignia or badge is worn on the uniform to designate meritorious citations.

I do believe there should be standardization of insignia to denote rank or position on the department. It should be in silver for line company officers and gold for chief officers.

James A. Jacobs, Chief, Gulf Breeze, Fla.: In our department, the traditional crossed trumpet cap devices are employed as follows: Five to denote chief; four, deputy chief; three, first assistant chief; and two, second assistant chief. These insignia are gold. Those of captains and lieutenants are of silver and are two parallel and a single trumpet respectively. The traditional "silver dollar" size is used and worn as cap devices only. Chief officers wear the cap with white leatherette top, black velvet band and gold cap strap and buttons; company officers wear the same cap with black silk braid band and silver cap strap and buttons.

Rank is designated by metallic gold or silver lace on uniform sleeves (chief officers gold, company officers silver), identical with Navy styling. The chief wears the commodore's braid (one broad stripe); deputy chief wears a captain's braid (four stripes); first assistant chief wears a commander's braid (three stripes); second assistant chief wears a lieutenant's braid (two stripes); captain also wears a lieutenant's braid; and lieutenant wears an ensign's braid (one stripe). No lapel insignia is worn. The chief wears the black velvet collar.

At the present time, no length-of-service insignia or devices are anticipated.

Members would be permitted to wear any medals or decorations to which they are rightfully entitled on dress occasions. Ribbon bars can be worn at other times.

By all means, standardization! As far as branch insignia are concerned, this has been tried throughout the country at different times, but these efforts were not lasting. I nevertheless agree with it and think we should try again.

H. C. Pate, Chief, Honolulu, T. H.: We use the following insignia: Chief, five gold crossed trumpets; assistant chief, four gold crossed trumpets; deputy chief,

THIS MONTH'S QUESTIONS

What insignia is used in your department to denote (a) chief of department; (b) assistant chief (or second in command); (c) deputy (or division chief); (d) battalion (or district) chief?

How is rank, or rating, designated on the uniform coat sleeve (a) by braid (if so, by width and color); (b) by other means?

Does your department use any insignia to denote length of service? If so, what and how worn?

Is wearing of citations (medallions or stripes) permitted? If so, what form do they take and how worn?

Do you believe the fire service should standardize on insignia to denote rank and branch of service?

three gold crossed trumpets; battalion chief, two gold crossed trumpets.

Rank is designated on the uniform coat sleeve as follows: Chief, four ½-inch bands in gold braid; deputy chief, three ½-inch bands in gold braid; assistant chiefs, two ½-inch bands in gold braid; battalion chiefs, one ½-inch band in gold braid.

Gold stars are worn by chief officers to denote length of service; silver stars are worn by all men below rank of chief officers. The stars are placed ½-inch above the striped braid on left sleeve, one star for each five years of service.

War service ribbons or medals are worn on the left breast of the coat, as may be authorized by the U. S. Government. Also, the Red Cross instructor's insignia are worn on the left sleeve directly below the shoulder seam.

We believe the fire service should standardize on insignia to denote rank and branch of service.

C. D. Williams, Acting Chief, Las Vegas, Nev.: The Las Vegas Fire Department uses the following insignia: Chief, five crossed nozzles; assistant chief, three crossed nozzle; battalion chief, two crossed nozzles.

All chief officers wear one ½-inch gold braid band on sleeves and special lapel insignia. All others have silver band.

All chief officers have gold badges with stars denoting rank. They also have white caps with white bills. Captains have white cap tops with black bills, silver badge with one star; all others have blue caps with black bills.

Maltese cross is worn on left sleeve, one for each five years of service, color matching the braid worn.

The wearing of citations is not permitted by our department.

We believe the fire service should standardize on insignia to denote rank and branch of service.

R. R. Gouldy, Chief, Chattanooga, Tenn.: Our department uses the following insignia: Chief, five bugles in crossed position; first assistant chief, four bugles in crossed position; all others, three bugles in crossed position.

We use a black velvet braid down each leg of trousers for chief's designation only.

A blue stripe worn on the left sleeve of the uniform coat denotes one year of service; a gold stripe is worn after four years and six months of service.

We believe the fire service should standardize on insignia to denote rank and branch of service.

E. L. Smith, Chief, Eugene, Oregon: The Eugene Fire Department uses the following insignia: Chief, five crossed trumpets on cap and coat badges; assistant chief, four crossed trumpets on cap and coat badges; battalion chief, three crossed trumpets on cap and coat badges.

Rank designation on the uniform coat sleeve is as follows: Chief, and assistant chief two ½-inch gold stripes on left sleeve; battalion chief, 1½ stripes on left sleeve.

A Maltese cross for each five years of

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In use, these new lacquers maintain a glossy surface far longer between polishes.

In production, as with most protective coatings, they call for well-engineered systems for **control of fire in flammable liquids.**

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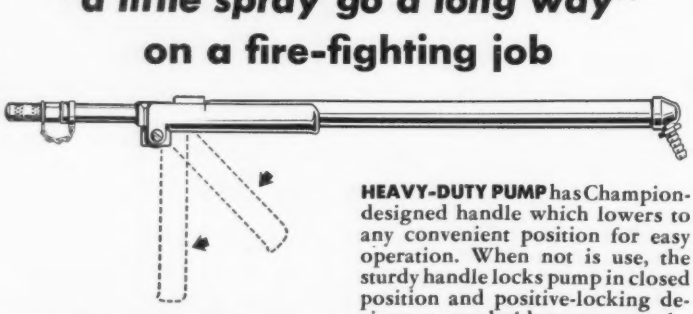
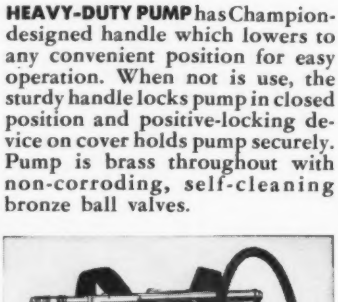
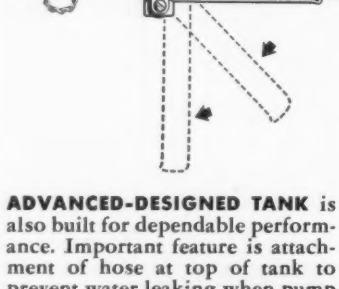
CHAMPION slide pump makes "a little spray go a long way" on a fire-fighting job



HEAVY-DUTY PUMP has Champion-designed handle which lowers to any convenient position for easy operation. When not is use, the sturdy handle locks pump in closed position and positive-locking device on cover holds pump securely. Pump is brass throughout with non-corroding, self-cleaning bronze ball valves.

ADVANCED-DESIGNED TANK is also built for dependable performance. Important feature is attachment of hose at top of tank to prevent water leaking when pump is below bottom of tank. Large filler opening has leak-proof cover with non-freeze gasket; locks securely, no threads to wear. Tank holds up to 5 gallons.





VENTILATED BACK is form-fitting and, providing air circulation between tank and operator's back, guards against discomfort. Wide, adjustable straps make it easy to carry as knapsack.

Piston-type pump also available. Write for literature on both models. Distributor inquiries invited.

CHAMPION SPRAYER COMPANY

Manufacturer of Portable Sprayers and Dusters

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TO THE CHIEF WHO DEMANDS INSIDE INFORMATION ABOUT GAS MASKS

WE CHALLENGE YOU TO BUY ONE OF EACH MANUFACTURERS FACEPIECE WEAR EACH AN HOUR——————AND GET THE REAL FACTS FROM THE INSIDE ACME CM-601-10 FACEPIECE GIVES:

NO DISTORTION! Due to flat lenses!

LESS FOG! POSITIVELY!
Patented Jet Air Valves direct ALL of the incoming air against the lenses.

WIDER VISION ANGLES! DEFINITELY!
Upward—fewer bumped heads.
Downward—less stumbling and falling!

SAFER FIT! Greater rubber area touches your face
Softer—No pressure points.

CENTER FLEXIBILITY — Adjusts to Narrow or Wide Faces with less tension on head harness.

INVESTIGATE **WRITE**

ACME PROTECTION EQUIPMENT COMPANY
1215 Kalamazoo St., South Haven, Michigan

service is worn above stripes on left sleeve, gold for officers, silver for others.

Our department does not permit the wearing of citations.

We believe the fire service should standardize on insignia to denote rank and branch of service.

Edward F. Crowley, Chief, Belmont, Mass.: The chief of our department uses a black velvet band on his hat and a gold snake band. Five gold bugles are worn on hat with similar gold insignia on each lapel of his coat. Regular size gold coat buttons bearing five bugles are also worn.

Three gold buttons with five bugles are worn on each coat sleeve at the wrist.

Our department does not use any insignia to denote length of service, nor do we permit the wearing of citations.

We believe the fire service should standardize on insignia.

William J. Barzycki, Chief, Blue Island, Ill.: We use the following insignia: Chief, five gold horns; assistant chief, four gold horns; battalion chief, three gold horns.

We do not designate rank or rating on the uniform coat sleeve.

Our department does not use any insignia to denote length of service.

The wearing of citations is not a part of our department's practice.

We believe the fire service should standardize on insignia to denote rank and branch of service.

Steve Taylor, Chief, Boise, Idaho: In our department, the following insignia is used: Chief, five bugles; assistant chief, three bugles, deputy chief, two crossed bugles.

Rank is designated on the uniform coat sleeve by braid. All chief officers have ½-inch gold braid. The chief wears two braids; all other chief officers wear single braid on each sleeve. Captains and lieutenants wear ½-inch silver braid; captains wear two braids and lieutenants wear one braid.

We do not use any insignia to denote length of service.

Our department does not permit the wearing of citations.

We believe the fire service should standardize on insignia to denote rank and branch of service.

William L. Hilbish, Chief, Alameda, Calif.: The Alameda Fire Department uses the following insignia: Chief, five gold crossed trumpets; assistant chief, three gold crossed trumpets; battalion chief, two gold crossed trumpets.

Rank is designated on the uniform coat sleeve as follows: Chief, one ¾-inch gold braid halfway around cuff of sleeves; assistant chief, two ½-inch gold braid halfway around cuff of sleeves; battalion chief, one ½-inch gold braid halfway around cuff of sleeves.

Gold Maltese crosses for each five years of service are worn on left sleeve cuff only, directly above the braid.

The wearing of citations is permitted only in cases of meritorious service. A patch designed to designate the award is worn on the left sleeve, halfway between the shoulder and elbow.

We definitely believe the fire service should standardize on insignia.

J. McKeon, Chief, Baldwin, N. Y.: We use the following insignia: Chief, five gold trumpets; first deputy chief, four gold trumpets; second deputy chief, three gold trumpets; third deputy chief, two gold trumpets.

We do not use a rank designation on the uniform coat sleeve, nor does our department use any insignia to denote length of service.

We believe the fire service should standardize on insignia, especially on Long Island in Nassau County, where company captains in a very few departments wear gold.

George C. Hepner, Chief Emeritus, Lawrence Township Fire Department, Cedarville, N. J.: I would like to offer the following suggestion for standardization of fire insignia to denote rank: Uniform coat sleeve: Chief, five ½-inch gold braids on each sleeve; assistant chief, four ½-inch gold braids on each sleeve; deputy chief, three ½-inch gold braids on each sleeve; battalion chief, two ½-inch gold braids on each sleeve; captain, one ½-inch gold braid on each sleeve; lieutenant, one ¼-inch gold braid on each sleeve. Lapels: gold silhouette insignia to denote rank, standard as now used. Coats: Double-breasted with eight gold buttons.

To denote length of service, I suggest gold stars on left sleeve above braid, each star representing five years of service. On my own uniform I have seven stars, three above four.

Citations should be worn above badge on left side of coat.

I agree 100 per cent on standardization of insignia and stars to denote years of service.

I served 34 years and three months as active chief of the Lawrence Township Fire Department and retired recently because of poor health.

NEXT MONTH'S QUESTIONS

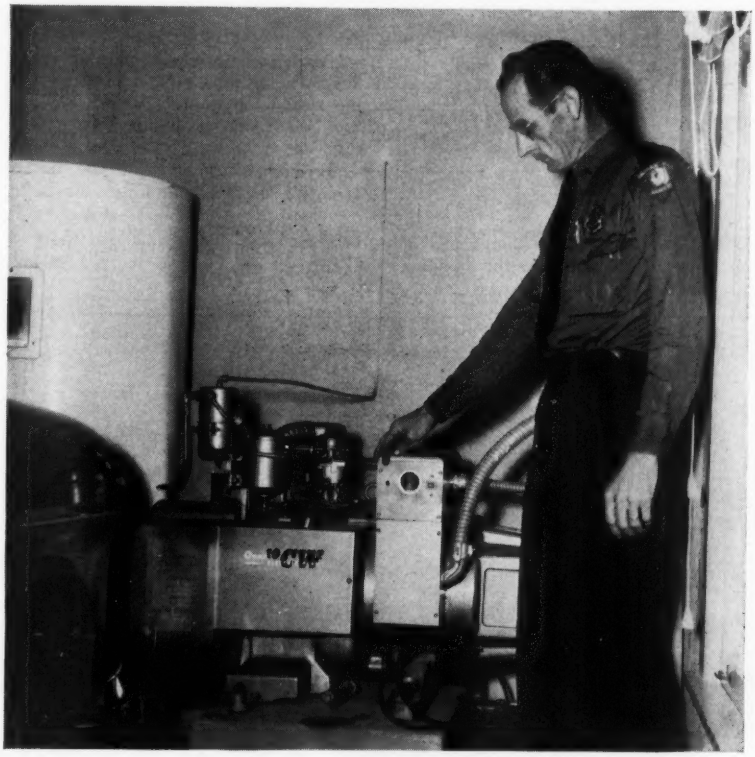
Does your method for coping with gasoline spills on highways and streets require flushing the flammable liquid into sewers?

If so, do you take precautions to prevent fire occurring at storm sewer discharges, sewage plants, etc., where gasoline may eventually collect?

If the flow of the liquid passes through nearby communities, is notification given to the proper authorities?

If flushing is not resorted to, what method is employed for disposal?

Onan NEWS REPORT



Onan Standby Electric Plants guarantee power in emergencies

This Onan 10KW emergency electric plant is installed in the community building of *Indian Hills, Ohio.* It not only provides the police department with all the light and power required, but supplies needs of the fire department, too!

When power interruption occurs, the Onan plant starts automatically and supplies current for all essential purposes . . . lights, radio communication, signals, heating system, and other motor-driven equipment.

Dependable Onan emergency electric plants provide electric power for operation of all vital municipal services. In time of disaster, when power interruptions are most likely to occur, emergency power saves lives, protects property, helps to restore and maintain order. Available in sizes from 500 to 200,000 watts; Diesel or gasoline-powered models.

Teletype machines in the Norwalk, Connecticut police department are supplied with power in emergencies by an automatic Onan Standby Plant. Norwalk's 3,500-watt Onan unit also furnishes power for the oil burner, radio, ventilating fans and 60 fluorescent lights.

See your local distributor or write for folder on standby models

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ELECTRIC PLANTS • AIR-COOLED ENGINES • KAB KOOLER • GENERATORS

Onan ELECTRIC PLANTS

THE WATCH DESK

overhauling the firemanic news of the day

Hassle Over Courthouse Hazard

Fresno, Calif., Fire Marshal Floyd E. Watson has run head-on into opposition in an effort to have the 70-year-old Fresno County Courthouse declared a hazard.

The county director of public works, Samuel Black, took issue with the marshal after the latter put the board of supervisors on notice that the building was dangerous from the first to the fourth floor. The marshal's main plaint is that the building presents a serious fire hazard; he suggests the county order a structural survey.

Director Black says the fire hazard is outside his line but insists the building is adequate for its present use. "Watson," he says, "complains that the floor shakes—that's because it is a flexible structure." Black bases his opinion on a structural engineer's report of inspection dated 1952, and on his own observation.

Meantime, the fire department is keeping its fingers crossed.

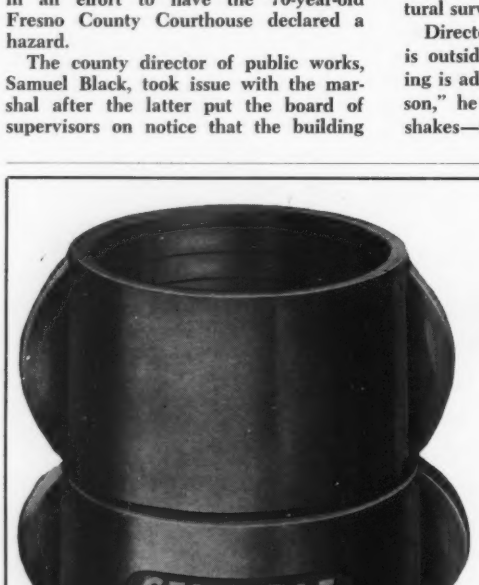

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PLATE 159. Sensible Lug Couplings are designed to glide over obstacles with no sharp edges to cut or damage hose. Made of high grade bronze. Our full 67 years experience are represented in this modern and dependable piece of equipment—SPECIFY "SENSIBLE."

POWHATAN BRASS *and* IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

Vamps Say It With Food

Flapjacks flew through the air about Thanksgiving time at the West Taghkanic firehouse near Hudson, N. Y.

The vamps gave a new twist to things by offering up a free pancake supper to the auxiliaries and residents of the Taghkanic Fire District as a "thank you" for the help and financial contributions given the fire company.

The volunteers planned the unusual ceremony as a gesture of gratitude to the women of the auxiliary who aided in many ways, including raising money by selling fire extinguishers, and to the people of the fire district. The men did the cooking, too.

Hot Iron Erases Old Flame's Tattoos

It is revealed by nurses at El Paso, Tex., General Hospital that a 43-year-old woman recently got mad at her boyfriend and used a hot flatiron to remove his name which was tattooed on each of her legs. The woman succeeded in erasing his name, as well as several inches of skin, nurses said.

She walked into the hospital with second and third-degree burns and told a nurse, "You know how it is, honey. I just don't love him anymore." The nurse replied, "I don't know how it is," and treated the burns anyway.

Firemen "Ask For"—and Get Alarm

In Lexington, N. C., second-graders from Dunbar elementary school visited the Lexington Fire Department's station in the morning hours as part of a fire prevention campaign. A fireman directed the tour during which he showed the youngsters the apparatus, explaining how it worked. Also, he showed 'em how to turn in a fire alarm. You guessed it!—a fire alarm was received at 3:25 p.m. that same day, after school was out. Twenty firemen and 11 volunteers hustled to answer the call—but no fire anywhere.

The usual false alarm investigation was made, and the unlucky culprit was found. He, of course, was one of the seven-year-olds who had watched so interestedly the demonstration that morning.

Cement an Extinguishing Agent

Andrew Budnich, 46, of Meriden, Conn., can thank wet cement—and Foreman Frank Selander, for saving his life.

Budnich was helping lay a cement floor in a college dorm' at New Britain, Conn., early in January. He was carrying a "portable salamander" of the oil-burning variety when the burner broke

and flaming oil covered his body. Foreman Selander ordered his workers to roll Budnich on the wet cement floor, where it is claimed the sticky mass smothered the flames.

Dogged Does It!

A delayed report from Jackson, Mich., just goes to show what fire fighters can expect when they tackle extra-curricular work.

It started with a stray dog. He fell through the ice of nearby Center Lake. Fireman Victor Hawley and Assistant Chief Max Nicholas of the rural Napoleon, Mich., Fire Department responded to a call for help. They tried to reach the animal.

Hawley fell through the ice. Nicholas pulled him out. Then three members of the Leoni force arrived, tied themselves together with rope, chain fashion, and finally rescued the frigid pup.

All hands started back for the warmth of the fire station. Then the truck mired in the mud. A wrecker finally came to rescue rescuers, apparatus—and canine.

Hot Off the Tape

Police at Ponca City, Okla., smelled clothes burning in the station house. They made a hurried investigation, and found a prisoner in the jail block, who had no tobacco, rolling his own—with rolled up rags! . . . Fire of undetermined origin January 9, destroyed Chicago's Roman Catholic Sacred Heart Church built one year after the great fire in 1871 . . . In Detroit, Mich., Mrs. Frazzie Brozeman was ironing in her home when she heard fire engines, and learned it was her mother's house, three blocks away. Mrs. Brozeman ran to watch the Brothers put out the blaze, then returned to her own residence—to find more firemen at work on another fire caused by her neglected hot iron . . . A 53-year-old resident of Pacoima, Calif., stepped from his car, December 30 and snapped a fire alarm box in Burbank. When firemen arrived they found Charles E. Alcott unconscious beneath the box at Ash and Flower Streets. He was pronounced dead on arrival at a hospital. Allcott apparently suffered a heart attack while driving and pulled the alarm to get aid . . . In New York City, fire swept a one-story menagerie building of an animal farm on January 8 burning 56 animals to death . . . In Rochester, N. Y., retiring Fire Chief Walter J. Adams got a fitting send-off at a testimonial banquet in his honor. A flareup of gas flames in a broiler in the new Hearth & Embers Room of the Hotel Manger brought fire fighters on the jump in response to an alarm. Fire was in the room directly below the banquet hall. Damage was trifling but the chief and 400 guests had a fine display of fire fighting efficiency . . . The Monticello, Ky., bank had its windows blown out by a dynamite blast. No burglars involved—only workmen next door who used too much explosive in excavating. Firemen found nothing much to do. □□

CAIRNS

IN TOP-GRAIN LEATHER

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The "NEW YORKER"
REGULATION

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The "SEAMLESS"
DROP BRIM

FIRE

IN ONE-PIECE ALUMINUM

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The "STREAMLINER"
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HELMETS

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FIRST LINE OF DEFENSE

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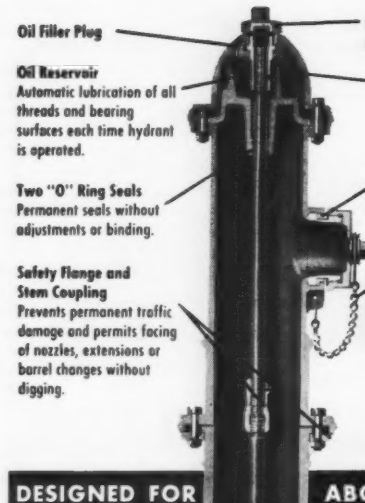

Oil Filler Plug

Oil Reservoir
Automatic lubrication of all threads and bearing surfaces each time hydrant is operated.

Two "O" Ring Seals
Permanent seals without adjustments or binding.

Safety Flange and Stem Coupling
Prevents permanent traffic damage and permits facing of nozzles, extensions or barrel changes without digging.

Bronze Weather Cap
Prevents ice-locking of operating nut.

Dry Top Design
Operating threads and bearing surfaces sealed from water.

Breech-Locked Nozzles
Interlocking lugs plus calking prevent blow-out.

Individual Non-Kinking Chains

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DESIGNED FOR ABOVE-GROUND MAINTENANCE!

Bronze Seat Ring
Straight threads permit easy removal from above without digging.

Bronze Cap Nut

Compression-Type Main Valve
Closes with the water pressure—and stays closed. Permits repair or modification without water shut-off!

Double Drain Openings
Automatically force-flushed each time hydrant is opened or closed.

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NO CHIEF SHOULD BE WITHOUT ONE!

GLOBE'S colorful, new firemen's clothing catalog — fully indexed and illustrated — gives you complete data, description and prices on the finest firefighting clothing of its kind in the world today.

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What's Burning

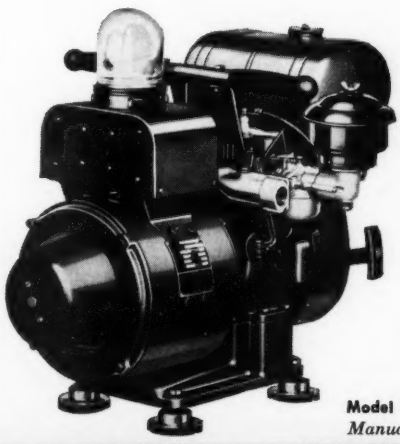
THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from December 22nd to January 21st.

Gadsden, Ala.—Mt. Zion Baptist Church destroyed.
Gadsden, Ala.—Newly completed and unoccupied dwelling at 2013 Argyle Hills destroyed.
Guntersville, Ala.—Redemer Air Device, Inc. plant damaged.
Mobile, Ala.—Alabama State Docks, housing Mobile Ship Repair Co., Inc., damaged. Break in acetylene gas line caused explosion.
Anchorage, Alaska—Lido Hotel, the Aleutian Gardens, a furrier shop, a cafe, a loan company and another night club destroyed.
Carlisle, Ark.—Miller Grain & Seed Co. damaged.
Forrest City, Ark.—A. B. King building damaged.
Gurdon, Ark.—Bob's Cash Market destroyed; Tog Shop damaged.
Lonoke, Ark.—Wattensaw Baptist Church destroyed. Grass fire.
Malvern, Ark. — Building housing Malvern Cleaners and Hank's Toggery, a men's clothing store, destroyed. Explosion in cleaning shop.
Los Angeles, Calif.—Building housing G. & W. Transfer Co. and Weber Showcase Co., destroyed.
San Francisco, Calif. — Playland-at-the-Beach warehouse damaged.
Topanga Canyon, Calif. — Approximately 58 dwellings and cabins in this area destroyed or damaged. Brush fire.
Ellington, Conn.—Two storage barns on old Stocker farm destroyed.
Hartford, Conn.—Old Cleveland Building opposite City Hall damaged.
Hartford, Conn.—Building housing several stores and Hartford Regional Technical School, heavily damaged.
Lakeville, Conn.—Vacant Stuart Theater destroyed.
Norwich, Conn. — Lee Memorial Methodist Church destroyed; adjoining Silberman's apartment-store building damaged.
Old Lyme, Conn.—Portland Hotel destroyed.
Stamford, Conn.—Two apartment dwellings on Pacific Street damaged.
Waterbury, Conn.—Connecticut Wholesale Supply Co. lumber yard damaged.
Newark, Del.—Barn at University of Delaware, South Chapel Street Extension, destroyed.
Wilmington, Del. — Peoples Credit Clothing Store destroyed. Snowman costume ignited.
Hilliard, Fla.—Pine Oaks Motel destroyed.
Hollywood, Fla.—Main barracks of Riverside Military Academy damaged.
St. Petersburg, Fla.—Harry Deyo's Super Market destroyed. Faulty wire on electrical appliances.
Warrington, Fla.—Hall Construction Co. warehouse destroyed. Oil heater.
Atlanta, Ga.—Stamps Tire Co., Inc. destroyed. Overloaded electrical switchboard.
Atlanta, Ga.—Sylvan Hills Baptist Church sanctuary destroyed.
Atlanta, Ga.—Truck Lines, Inc. depot destroyed. Truckload of chemicals exploded.
Byromville, Ga.—Byromville Elementary School destroyed.
Clayton, Ga.—Lakemont Elementary School destroyed.
Macon, Ga.—Bibb County Forestry Unit's office building destroyed.
Pineville, Ga.—Clear Creek Archery Supply and Campus Grocery Store on Clear Creek's Baptist School campus, destroyed.
Savannah, Ga.—Dream House Furniture Co. warehouse heavily damaged.
Washington, Ga.—Wilkes County Courthouse damaged. Overheated flue.
Coeur D'Alene, Idaho—Coeur D'Alene Hardware building destroyed.
Chicago, Ill.—St. Paul's Lutheran School destroyed.
DuQuoin, Ill.—Seventh Day Adventist Church heavily damaged.
Galesburg, Ill.—Clothing and uniform factory building damaged.

Grayville, Ill.—Bovaird Supply Co. and church building destroyed.
Johnston City, Ill.—Houghlan Nursing Home destroyed.
Joliet, Ill.—F. E. Schundler Mfg. Co. roofing and siding plant damaged.
Libertyville, Ill. — Permatape Co. plant destroyed.
Litchfield, Ill.—Heyen Implement Co. building destroyed.
West Frankfort, Ill.—Streamline Garment factory destroyed. Explosion.
Decatur, Ind.—Blackstone Cafe, four business firms and *Daily Democrat* newspaper office damaged.
Evansville, Ind.—Two-story parking garage in downtown area, damaged.
Mishawaka, Ind. — Lincoln Highway Inn destroyed.
Wabash, Ind.—Wabash Smelting Co. plant damaged.
Clinton, Iowa—Coliseum Building and Scottish Rite Temple destroyed.
Des Moines, Iowa — Building housing Des Moines Elks Club destroyed.
Fonda, Iowa—Building housing Kelly's Tavern & Pool Hall and Amuzu Theater damaged.
Sioux City, Iowa—Two buildings destroyed.
Cadiz, Ky.—Three buildings in business district, housing Albert Wallace Furniture Co. and Beck's Gift Shop, destroyed.
Elizabethtown, Ky.—Swope Motor Co. damaged.
Northville, Ky.—Combined Louisville & Nashville and Illinois Central Railroad depot destroyed. Defective flue.
Omaha, Ky.—Meeks garage destroyed.
Symsonia, Ky.—Farmer's Supply Co. destroyed. Kerosene stove.
Lake Charles, La.—Southern Furniture Co. and Singer Sewing Machine Co. building badly damaged.
Fort Sulphur, La.—Langston Cash Grocery destroyed. Gas heater.
Bucksport, Me.—Business block, housing Grindale Store, Masonic Hall, vacant store, metal window firm and apartments, destroyed.
Monmouth, Me. — Chicken house owned by Harry E. Bates destroyed.
Catonsville, Md.—Thorn Ford Sales Inc., auto agency, destroyed.
Fort Meade, Md. — Sid's Department Store, lunchroom, 400 Club, Connie's Bar and General Store destroyed.
Glenwood, Md.—Dwelling of John Cotton destroyed.
Boston, Mass. — Bethany Baptist Church destroyed; several dwellings damaged.
Boston, Mass.—Trimount Plastic Co., Inc. damaged.
Fall River, Mass.—Building owned by Urban Redevelopment Corp., housing apartments and Columbia Cafe, heavily damaged.
Framingham, Mass. — Green Acres Recreation Center destroyed.
Greenfield, Mass. — Mansion House, housing Greenfield Savings Bank and six stores, destroyed.
Haverhill, Mass. — Dorothy Apartments, Gaudreau's Barber Shop and Jack Gordon's Army & Navy Store damaged.
Lynn, Mass.—Business block at Market and Liberty Streets destroyed.
New Bedford, Mass.—Sixth Bristol District Social Club destroyed.
Roxbury, Mass.—A. M. E.-Zion Church damaged.
South Dennis, Mass.—Stable and nine race horses destroyed.
Templeton, Mass.—Chetwood Restaurant destroyed.
Williamstown, Mass.—Delta Kappa Epsilon fraternity house at Williams College damaged.
Clinton, Mich.—Storage shed of Raymond Bellmore destroyed.
Kalamazoo, Mich. — Classroom building on Western Michigan University campus destroyed.
Mount Clemens, Mich.—Elkin Hotel, being remodeled, damaged.
New Buffalo, Mich.—Surf and Sand Supper Club destroyed.
Saginaw, Mich.—Building at 2607 S. Washington, housing launderette of Duane Killingsworth, destroyed.
Sault Ste. Marie, Mich.—Business block, including Barrish Bros. Clothing and Gamble Auto Supply Shop, damaged.
Wyoming, Mich.—*South Kent News* plant damaged.

Please turn page

Kohler Electric Plant rides with volunteer fire department



A truck-mounted 1500 watt Kohler electric plant, for floodlights and power tools, helps volunteer firemen of Black River, Wisconsin, control fires with speed and safety.

Rural and city departments use portable Kohler plants for reliable, quick-starting power . . . Larger models maintain alarms, communications, when emergencies cut off highline power. Sizes to 100 KW, gasoline and diesel. Write for illustrated folder D-7.

Model 1.5M25, *1500 watts, 115 volt AC. Manual start.*

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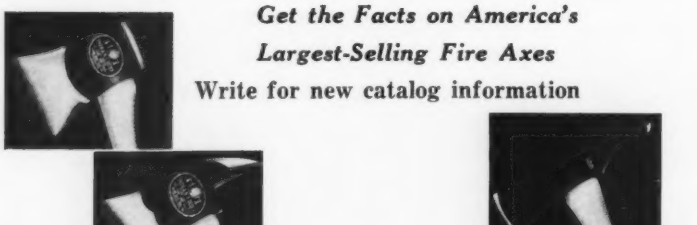

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BALANCE
IS THE DIFFERENCE
WHEN YOU'RE UP
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Every MANN axe is precision balanced to make the swing easier, the bite deeper, your foot surer. There's no place for "second best" when lives are at stake, when every second counts!

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with built in dependability; where dependability may mean a man's life.

Plastic non-conducting handle
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Cushioning and moisture seal ring gasket
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Twist lock connector can't pull loose.
Rubber boot, seals out dirt and moisture.
Heavy wire lamp guard
Friction lock elevation hand wheel
Large diameter tip proof base.

Send for bulletin NP

CIRCLE-D-LIGHTS
NATALE MACHINE & TOOL CO. CARLSTADT, N. J.

Moss Point, Miss.—Joy Theater destroyed.
Kohler City, Mo.—General store, a restaurant and grocery destroyed.
Anaconda, Mont. — Business building housing Cooper City Bowling Center, MacIntyre's Clothing Store and Pintlar Bowmen Archery Range, destroyed; adjacent Earl's Modern Cleaners damaged.
Townsend, Mont.—Neifert-White Co. building, housing hardware-machinery sales firm destroyed.
Atlantic City, N. J.—Vacant guest house at 3003 Pacific Avenue damaged.
Bayonne, N. J.—Six buildings housing five stores at 429 and 435 Broadway, damaged.
Belleville, N. J.—Building on 260 Washington Avenue damaged.
Deerfield, N. J.—Deerfield Produce & Supplies Warehouse destroyed.
Jersey City, N. J.—W. T. Grant Co., Jack's Men's Shop, Fabric Outlet and Lorraine Shops, damaged.
Keansburg, N. J.—Two buildings housing *Keansburg News* damaged.
Newark, N. J.—Gliken Bros. Wholesale Tobacco Co. building damaged.
Paterson, N. J.—Kartch's Children's Wear Store and Stenchever's destroyed; Turndorf's Men's Clothing Store, United Cigar Store, Nedick's, Eclipse Shop and John's Bargain Store, damaged.
Penns Grove, N. J.—Log Cabin nightclub destroyed.
Phillipsburg, N. J.—Buildings at 795-797 South Main Street destroyed.
Albany, N. Y.—Ballston Motor Sales Co. building and garage destroyed.
Buffalo, N. Y.—Seven stores in building owned by Realty Corp. on Bailey Ave. destroyed.
Cobleskill, N. Y.—Poultry Laboratory building at New York State Agricultural and Technical Institute, destroyed. Defective heating unit in brooder.
Hammondsport, N. Y.—D. W. Putnam & Co. wine and grape juice storehouse destroyed.
Richmond Hill, L. I., N. Y.—Morris Park roundhouse damaged.
Staten Island, N. Y. — All Saints Episcopal Church considerably damaged.
Straits Corners, N. Y.—Chicken house of John Stangle destroyed. Defective oil space heater.
Syracuse, N. Y.—Air Force barracks at Syracuse University housing area destroyed.
Charlotte, N. C.—Office building at North Independence Boulevard and East Fifth Street destroyed. Loaded fuel tanker struck parked car.
Creedmoor, N. C.—Bevins Esso Service Station, Guin's Shoe Shop, New Home Furniture Store, a TV repair shop, and a warehouse, destroyed.
Fayetteville, N. C.—Cumberland County school garage and 16 vehicles damaged.
Goldsboro, N. C.—A. T. Griffin Mfg. Co. destroyed.
Greensboro, N. C.—North Drive-In Theater destroyed.
Lexington, N. C.—Rothrock Furniture Co. extensively damaged. Welder's sparks.
Mooresville, N. C.—Building housing 5 & 10-cent store destroyed.
Mount Gilead, N. C.—Montgomery Paper Box Co., United Mills and two adjacent buildings destroyed.
Mount Holly, N. C.—Massey Hardware Store destroyed.
Oxford, N. C.—Oxford Furniture Co. destroyed.
Smithfield, N. C.—Johnson Cotton Co's furniture and appliance store damaged.
Akron, Ohio—Tangier Restaurant damaged.
Akron, Ohio—Twinsburg-Miller Corp.'s plant No. 2 damaged.
Alliance, Ohio—Aldon's Restaurant and Drive-In destroyed. Defective wiring.
Cambridge, Ohio — Gymnasium of Cambridge High School destroyed.
Canton, Ohio—El Rocco Restaurant damaged.
Cleveland, Ohio—Addison Square Building, occupied by 14 stores and apartments, damaged.
Cleveland, Ohio—Auto Body Repair Shop, operated by Economy Buick Co., destroyed. Torch sparks.
Cleveland, Ohio—Esquire Hotel damaged.
Columbus, Ohio—Building at Ohio State University damaged.
Norton, Ohio — Kiddie Kastle and Wagoner-Marsh Shoe Co. destroyed; S. S. Kresge Co. and Jean's Frocks damaged.
Steubenville, Ohio—Catholic Community Center building, downtown, heavily damaged.
Warren, Ohio—Champion Sandwich Shop destroyed.

Washington Court House, Ohio—Grace Methodist Church destroyed and adjoining parsonage damaged.
Westerville, Ohio—Country home of T. Woodbridge Brooks destroyed.
Hillsboro, Ore.—Chic-Inn Restaurant destroyed. Faulty fuse box.
Lakeview, Ore.—Summer Lake Post Office, store and dwellings destroyed.
Merrill, Ore.—Winema Elevators, Inc. destroyed.
Portland, Ore.—Grove Restaurant destroyed.
Portland, Ore.—Western States Television Co. destroyed.
Sweet Home, Ore.—Oar Lumber Co. and Holly Broom Handle destroyed.
Bellefonte, Pa.—Center County Jail building destroyed.
Brandywine Summit, Pa.—Clemens Lumber & Supply Co. warehouse destroyed.
Hanover, Pa.—Hoke-Bair Inc. store building destroyed. Defective motor operating hammer mill.
Kutztown, Pa.—Barn housing Levin's Old Mill Restaurant destroyed.
Mahoney City, Pa.—Five businesses and five dwellings destroyed or damaged.
Mount Joy, Pa.—Lancaster Leaf Tobacco Co. warehouse destroyed.
Norristown, Pa.—Cocktail lounge and Crossroads Motel damaged.
Philadelphia, Pa.—Building housing James F. Burns Co. and V. V. Fittings Co. heavily damaged.
Philadelphia, Pa.—Building housing Forman's Babyland, Inc. damaged.
Philadelphia, Pa.—Kensington Farmers Market and Auction Fair damaged.
Philadelphia, Pa. — Joseph G. Neidinger Co. warehouse heavily damaged.
Pittsburgh, Pa.—Pig machine building at United States Steel Corp. Duquesne Works destroyed.
Pottstown, Pa.—Bob and Marty's Tavern destroyed.
Reading, Pa.—Building housing Belle Chemical Co. damaged.
Rebuck, Pa.—Himmel's Lutheran and Reformed Church destroyed.
Scranton, Pa.—Davidow Building, housing 20 business firms and adjoining Comerford Theater and Schreiber's Clothing Store, damaged.
Sharon, Pa.—Building occupied by Sharon Tire Co. damaged.
Narragansett, R. I.—Marine Research Laboratory of University of Rhode Island damaged.
Eastover, S. C.—Grainery of F. C. Hill destroyed.
Wellford, S. C.—Wellford Grammar School destroyed.
Bolivar, Tenn.—Main warehouse of Western State Hospital damaged.
Elizabethton, Tenn.—Power City Mill destroyed; nearby dwelling of Kyte family damaged.
Etowah, Tenn. — Pleasant Grove School destroyed. Coal heater.
Friendsville, Tenn.—Gymnasium of Friendsville High School destroyed.
Knoxville, Tenn.—Plants of Lee Textile Co. and Figure-Tone Corp. destroyed.
Memphis, Tenn.—Separator Mfg. Co. woodworking plant heavily damaged.
Pelham, Tenn.—Jim and Alf Sartain's feed store, Masonic Lodge building and dwelling owned by Mrs. Henrietta Ray destroyed.
Rutledge, Tenn. — Hammer Grade School destroyed.
Shelbyville, Tenn. — Tom Tune Tractor Co. heavily damaged.
Whitwell, Tenn.—Surface buildings, including screening plant, tipple and 1,000-foot conveyor belt of Reel's Cove Mine, destroyed.
Amarillo, Tex.—Cosmopolitan Furniture Store and adjoining buildings destroyed.
Houston, Tex.—Dormitory on Texas Southern University campus destroyed.
Waco, Tex.—Chemistry Building Annex, Baylor University, damaged.
Brattleboro, Vt.—Building housing Carrol's Drug Store, Madeline's Beauty Salon and apartments destroyed; adjacent Ludwig's Beauty Shop, Singer Sewing Machine Center and Methodist Church, damaged.
Blacksburg, Va.—Church of God destroyed.
Danville, Va.—Building housing Schewels Furniture Store, Danville Electric Supply Co., Tom's Cafe, Liberty Cleaners, Liberty Barber Shop, Belmont Rooming House and Western Union office, destroyed.
Danville, Va. — Tobacco warehouse, Farmers Supply Co. and S. H. Bassett Furniture Store, destroyed.

Please turn page

Call **ONE** *not* **ALL**
automatically...
SELECT *the proper*
GROUP *for* **ALERTING!**
with the new
monitoradio
Selective Group Alerting Equipment

TC-1 TC-2

Long needed dependability at a realistic cost... Monitoradio Division of I.D.E.A., Inc., has developed a device for selective group alerting. This is particularly desirable where one transmitter is being used for more than one purpose; as for instance, one transmitter may be used for the Police Department, the Fire Department, and miscellaneous communications.

Two models are available; the TC-1, which is priced at $43.50, is powered and designed for use with Monitoradio Models MRC-10, MRC-33, and DR-200; the TC-2 is designed for use with Monitoradio MCA-100, from which it derives its power, and is priced at $37.50. These units can also be used with similar receivers of other makes.

This equipment, consisting of a tone switch to be attached to the receiver and a tone generator on the base station transmitter will allow selective calling of one or a group of receivers so equipped. The tone switches hold the receivers mute until the proper audio frequency tone is transmitted, at which time the tone switch responds and closes the receiver speaker circuit, allowing the message to be heard. Expressly featured in these tone switches are unique bridging and time delay circuitry which very effectively prevent false triggering from "stray" audio tones; thereby overcoming one of the most heretofore troublesome difficulties with such equipment.

The tone switches require no wiring or cutting into the set circuitry to install. They are small—only 3½" x 4¾" x 3½"—and attractively packaged.

The tone generators are made in models providing 1, 2, or 3 separate audio tones to allow for the alerting of up to three different groups from one transmitter.

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RESCUE KIT

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SUPER-FAST 7½ TON HYDRAULIC JACK —fast extension with fewer pump strokes * ALL-POSITION RAM—pin-points needed power * CHAIN PULL KIT—fast and versatile * BITE-TITE CLAMPS—give positive grip on thinnest metal * SPREADER—closes to 1½"—spreads to 15½" * SPEED-LOK TUBING—sections snap together instantly. Plus attachments to solve any rescue problems.

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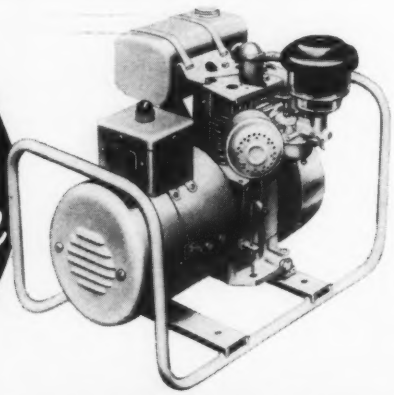

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Wherever you need *power on the spot* you can rely on rugged Pioneer Generators. They are service-proved for over 32 years on thousands of jobs. Select a Pioneer for top performance from many models ranging from 500 to 12,000 watts.

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5832 West Dickens Ave., Chicago 39, Illinois

Norfolk, Va.—White Lumber & Millwork Co. machine shop and warehouse destroyed.
Pulaski, Va.—Restaurant of E. W. Thompson destroyed.
Richmond, Va.—Three-story mansion of late Horace A. Gray, Jr., destroyed.
Rocky Mount, Va.—Elaine Florist Shop and warehouse building destroyed.
Aberdeen, Wash.—Western Auto Supply store and apartments destroyed.
Bellevue, Wash.—Wasserman Apparel Store destroyed. Faulty wiring.
Black Diamond, Wash.—Black Diamond Presbyterian Church, library and apartments, destroyed. Faulty furnace.
Colfax, Wash.—First Baptist Church destroyed. Faulty wiring.
Coupeville, Wash.—Glendale Hotel and Hardware Store destroyed. Gasoline lantern explosion.
Longview, Wash. — Judd's stationery-supply store destroyed.
Seattle, Wash.—Juanita Community Church destroyed. Fuse box short.
Tacoma, Wash. — Bethlehem Lutheran Church destroyed. Combustion.
Washougal, Wash.—Harold C. Young's barns Livestock Center destroyed.
Yakima, Wash.—Terrace Heights Grange Hall destroyed. Faulty furnace.
Kingwood, W. Va.—LNB Corp. woolen mill, formerly known as Eaglehart Woolen Mills, destroyed.
Martinsburg, W. Va.—Nursing Home owned by Mrs. Velma Smith destroyed.
Webster Springs, W. Va.—Three buildings housing lodge hall, Hugh Ferrell beer distributorship, Gerwig's Jewelry Store and apartments, destroyed.
Wheeling, W. Va.—Mansion of J. Gordon Hutchinson destroyed.
Park Falls, Wis.—Gene's Refrigeration Service Shop, Wenninger Grocery Store, Hep Cat Cafe and dwelling of Oliver Morton, destroyed.
Wausau, Wis.—Department store destroyed.
Ottawa, Ont.—Apartment dwelling in Sandy Hill area destroyed. Smoking mishap.
Schefferville, Que.—Iron Ore Co. of Canada warehouse building severely damaged. □□

November Fire Losses

Estimated fire losses in the United States during November amounted to $71,539,000, the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this $71,539,000 loss represents a decrease of 5.0 per cent from losses of $75,321,000 reported for November 1957, and a decrease of 2.5 per cent from losses of $73,393,000 for last October.

Losses for the first 11 months of 1958 now total $955,743,000, an increase of 2.6 per cent over the first 11 months of 1957, when they amounted to $931,671,000.

These estimated losses include an allowance for uninsured and unreported losses.

Safety Drive Pays Off

The accident death rate among children of ages one to 14 has declined 17.3 per cent in less than a decade, Dr. George W. Wheatley, vice president of the Metropolitan Life Insurance Co., recently told doctors at the annual clinical conference of the American Medical Association.

The greatest drop was in deaths from burning and poisoning in the one-to-four-year-old age group. In these areas, doctors have fought hard for legislation banning the use of flammable materials in clothing and limiting the amount of poisonous lead in paint on articles children might chew.

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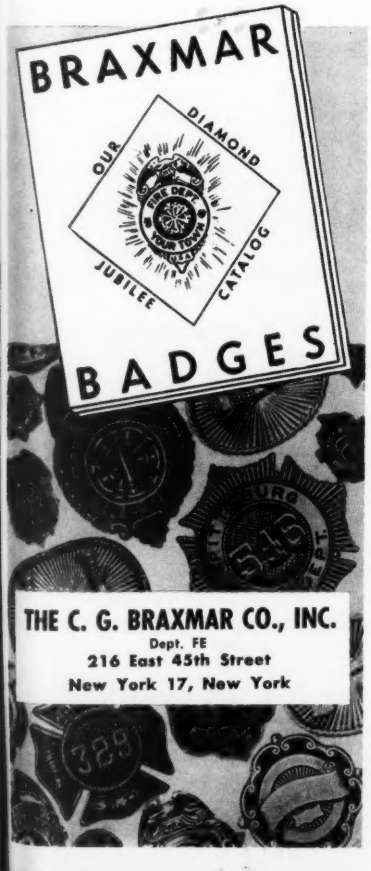
1879–1959

Better today than ever before in our 80 years of fine badge making—better through employment of latest techniques plus greater experience. We offer the widest selection of badge designs—all available in a wealth of excellent materials. Any badge you want can be had in nickel, chromium, rhodium, sterling silver, gold plate, perma-glo, gold filled and 14 Kt. gold.

Send for new price list on badges illustrated in our Diamond Jubilee Catalog.



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Obituaries

Charles C. Lenz, Sr.

Charles C. Lenz, Sr., 64, a widely known and popular figure in the municipal signaling field, died December 13 at his Easton, Conn., home. At the time of his death he was president of the Atlas Safety Equipment Co., and the Marbelite

Co., Inc., both of Brooklyn, and of the Ruleta Co., Inc., of Bridgeport, Conn. He was very active in the emergency and traffic safety field and was a member of the International Association of Fire Chiefs, the International Municipal Signal Association and the Institute of Traffic Engineers. He is survived by his wife, a son and a daughter.

Chief W. Douglas Webster

Chief W. Douglas Webster of the North Queensbury, N. Y., Volunteer Fire Company collapsed and died on August 20 after being stung by a bee while working on the east shore of Lake George. Chief Webster failed to respond to a resuscitator applied by his own men, and was rushed to a hospital where he was pronounced dead on arrival. The coroner said that death was due to asphyxia caused by hypersensitivity to bee sting.

Chief Webster was a charter member and past director of the fire company of which he served as chief for the past five years. He was vice president of the Chiefs and Officers Association of Warren County Bureau of Fire.

John M. Spader

John M. Spader, 80, a retired Gamewell Co. representative, died January 4 at United Hospital, Port Chester, N. Y. He was widely known in municipal signal and fire service circles.

Mr. Spader joined Gamewell in 1902 as a shipping clerk in the factory located at the time in New York City. In 1907 he became an outside constructor at the Pittsburgh office and in 1912 moved to Winnepeg, Manitoba, as sales engineer for Northern Electric Co., Canadian dis-

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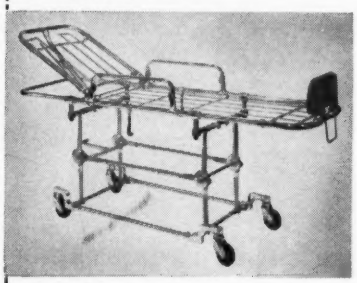
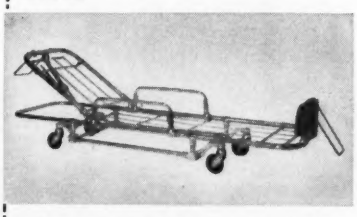
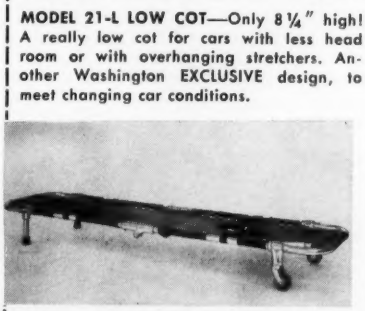


MODEL 54-L ELEVATING COT—A Washington exclusive design. Elevates to near hospital bed height, yet lowers to only 9½" high! A perfect cot for vehicles with limited head room and overhead hanging stretchers. Here's all the advantages of an elevating cot—plus extra head room when lowered.



MODEL 21-L LOW COT—Only 8¼" high! A really low cot for cars with less head room or with overhanging stretchers. Another Washington EXCLUSIVE design, to meet changing car conditions.



MODEL II FOLDING STRETCHER — Lightweight and rugged, folds to 3¼" high. Ideal when an extra stretcher is needed in a hurry!

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Built for Random Lake, Wisc. Fire Department by John Bean Division of Food Machinery Co., Lansing, Mich. With the aerial truck in the street reaching over a row of parked cars this 65 ft. MEMCO AERIAL LADDER has more than enough length to reach the top of this big 5 story warehouse. MEMCO AERIAL LADDERS are built in 50 and 65 foot lengths. Have you requested a copy of our latest catalog?

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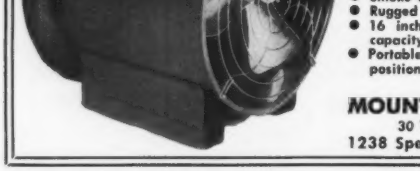

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PROVED — THE EFFECTIVE WAY TO CLEAR SMOKE FROM BURNING BUILDINGS!

- In use the country over by large and small departments
- Positively clears smoke from burning rooms, aids in locating flames
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- Rugged construction for years of trouble-free service
- 16 inch 3-blade propeller gives unmatched air moving capacity
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1. Pliers
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tributors of Gamewell equipment. In 1930 he was placed in charge of sales in eastern Pennsylvania and part of New York. He retired from the company in 1952.

Edward C. Keating

Edward C. Keating, 88, retired vice president of American LaFrance, died on December 29 in Southern Pines, N. C. He was a resident of Montclair, N. J. Prior to 1928, he served as sales manager of LaFrance.

A. A. Royce, NBFU

Albert A. Royce, 55, a special agent of the National Board of Fire Underwriters for 30 years, died January 15 at Beekman Hospital, New York City, after a long illness. Mr. Royce joined the National Board as a special agent on October 8, 1928, and was assigned to the Brooklyn area. □□

Persons in the News

Pueblo Changes Personnel

Chief Edward G. Colglazier, Pueblo, Colo., Fire Department retired on October 23, 1958. He was succeeded by Assistant Chief George F. Lowe, Jr.

Chief Colglazier joined the Pueblo department in April 1928. He was promoted to captain in 1932; to assistant chief in 1942 and became chief on December 25, 1952.

Chief Lowe was appointed to the department in 1939. He became a captain in 1945 and assistant chief in 1948. His appointment as chief was effective October 23. 1958.

Assistant Chief J. Earl Martin retired from the department on September 3, 1958. He was appointed a fireman in 1937, promoted to captain in 1942, and assistant chief in 1948.

Rathke Succeeds Butler In San Antonio

Chief M. L. Butler, San Antonio, Tex., Fire Department, retired on February 4, his 65th birthday. Under Texas law, 65 is the mandatory retirement age.

The city council appointed Chief Training Officer Arnold Rathke to succeed Butler. A veteran of 42 years in the department, Chief Rathke will be 65 on January 3, 1960.

Communication Changes In Cincinnati

Colonel C. S. Jones, superintendent, Fire Alarm and Communications Division, Cincinnati, Ohio, retired December 1, after nearly 40 years of service. He was succeeded by A. W. Nightingale.

Superintendent Nightingale was appointed to the fire alarm signal service in 1926 and promoted to assistant superin-

tendent in 1938. During World War II, while Colonel Jones was on active duty with the Army Signal Corps, he held the position of superintendent. A well-known expert in the fire alarm field, he is a director of the International Municipal Signal Association and an alternate member of the Committee on Signaling Systems and Thermostats, NFPA.

Additional promotions in the division include: Radio Supervisor James L. Hearne to assistant superintendent, and Dispatcher Vincent F. Grote who will supervise the fire alarm system in the newly-created post of "communications supervisor."

Pat S. Holz

Renfro Promoted

Captain Benjamin F. Renfro has been promoted to battalion chief rank in the Los Angeles City Fire Department. He replaces Battalion Chief Harold F. Bradley who retired January 1 after 26 years' service. Chief Renfro formerly was in charge of the L.A.F.D.'s photography and publicity bureau.

—Cliff Dektar

Ontario Marshal Visits Rome

Fire Marshal William J. Scott recently visited the vast Central Fire School at Rome, Italy. Undergoing training at the time were 500 recruit fire fighters taking a four-month special course. The regular training program of the school includes a six-month specialized junior officers course as well as short courses. Over 600 trainees may be accommodated for training, sleeping and eating at one time in the extensive facility.

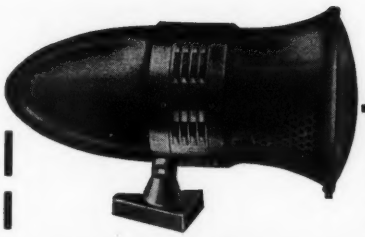
Fire Marshal W. J. Scott looks over a complete scale model of the Rome Fire College with Vice Commandante Stefano Gabotto

Marshal Scott visited Italy following conclusion of the NATO civil defense working party on fire fighting, held in London last October, where he was a delegate from Canada.

NBFU Promotions

The National Board of Fire Underwriters has announced the promotion of five staff members in its engineering department and two in its arson department.

Kenneth J. Carl, director of municipal surveys, has also been named assistant chief engineer; W. William Pritsky becomes director of codes and standards; Donald L. Drumm advances to assistant chief engineer, Gordon C. Anderson to



MODEL 20 SIRENLITE for Emergency Vehicles

Siren sounds a penetrating warning, red light automatically flashes authority. Traffic opens instantly, day or night. FREE ROLLING feature.

STERLING SIRENS

■ HANDSOME
■ RUGGED
■ RELIABLE

Built by proud craftsmen to the highest standards of precision manufacturing . . . utilizing materials of finest quality . . . Sterling Sirens give year-after-year of unsurpassed dependability and satisfaction.

MODEL 20 SIRENLITE FIRE ALARM SIREN for Volunteer Systems

Quick acceleration, power-plus . . . Model M really gets the boys out in a hurry! Used by championship companies from coast to coast. A dependable, heavy-duty siren built of the finest materials throughout.

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THE STERLING SIREN FIRE ALARM CO., INC.
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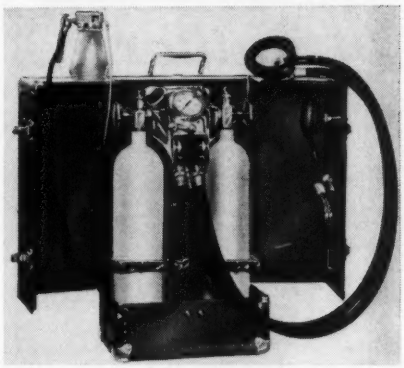
The STEPHENSON PORTABLE RESUSCITATOR

will protect your community —and you



This instrument will give maximum protection to the people of your community against smoke suffocation, electric shock, drowning and other respiratory emergencies. It is really four instruments in one: RESUSCITATOR, INHALATOR, ASPIRATOR, ASSISTOR.

In resuscitation the mixture is adjustable from 100% oxygen to 50% oxygen, 50% nitrogen from the air. This feature prevents oxygen poisoning in prolonged cases and doubles the life-saving capacity of the two D size cylinders. A simple selector regulates pressure from Adult to Infant to Assistor (one-half Infant pressure) for bridging the gap between resuscitation and inhalation. This range is essential in chest injuries, where the patient makes the first efforts to breathe after being overcome, and in working with small children. An extra Midget attachment permits resuscitating two patients and aspirating a third simultaneously.

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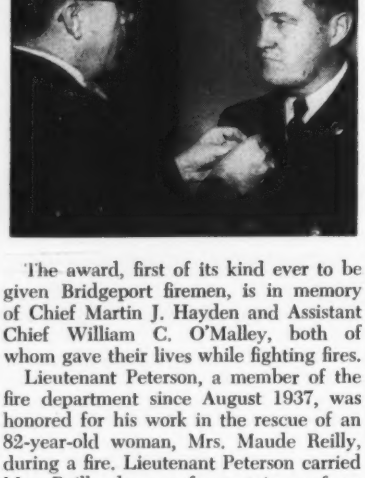
supervisory engineer and Boyd A. Hartley, administrative assistant assigned to the general office.

In the arson department, John E. Stuerwald has been designated supervisor of fire investigations in the eastern and southern states, and Gilbert H. Meyer was made supervisor of inland marine investigations throughout the United States.

Bridgeport Fireman Awarded Medal for Heroism

Lieutenant Oscar Peterson of the Bridgeport, Conn., Fire Department, became the first fireman in that city to receive a medal for acts of heroism when he was awarded the Hayden-O'Malley Medal of Valor on November 18, at a meeting of the board of fire commissioners. Thomas J. Barrett, president of the board, presented the medal.



The award, first of its kind ever to be given Bridgeport firemen, is in memory of Chief Martin J. Hayden and Assistant Chief William C. O'Malley, both of whom gave their lives while fighting fires.

Lieutenant Peterson, a member of the fire department since August 1937, was honored for his work in the rescue of an 82-year-old woman, Mrs. Maude Reilly, during a fire. Lieutenant Peterson carried Mrs. Reilly down a front stairway from her bedroom in his second attempt to reach her through the smoke-filled house. The woman later died of burns from the blaze.

—Tom Magner

Chief Walter Johnson Retires

Fire Chief Walter Johnson who had headed the Oceanside, Calif., Fire Department since October 10, 1929, retired in February.

The widely known and popular chief entered the paid fire department at the time of its organization in 1925 as assistant chief. He was promoted four years later to chief.

He served on the California State Fire Advisory Board from 1944 to 1947 and has headed various committees of the state and county organizations.

Chief Johnson is a member of the International Association of Fire Chiefs, the Pacific Coast Inter-Mountain Fire Chiefs Association, the San Diego County Fire Chiefs Association and other fire service groups.

Now! Every Firefighter Can Afford This Valuable ADVANCED PROFESSIONAL TRAINING!

"The Science and Technique of

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PREVENTION, PROTECTION and EXTINGUISHMENT"

"PAY-by-the-LESSON" PLAN!
NO BURDENSOME TIME PAYMENTS
Set your own study pace. Take up to 3 years for completion of the course.
APPROVED for KOREAN VETS!
VA Pays Entire Cost of Training

A comprehensive correspondence course for Firefighters who wish to increase their technical knowledge and improve their practical efficiency. While invaluable for promotional purposes, it is also of tremendous advantage in the daily work and responsibility of Firefighters everywhere.

37 INTERESTING LESSONS
Test questions with each lesson rated and returned with model answers.

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Warns on Hazards Of Carbon-14

Dr. Linus Pauling recently warned that the carbon-14 produced by hydrogen and atomic bombs poses a much greater threat to living and future generations of mankind than the widely publicized strontium-90 and other bomb "fall-out products." Dr. Pauling, a Nobel Prize winner and professor of chemistry at California Institute of Technology, made his statement in a communication to the technical organ of the American Association for the Advancement of Science. He challenged Dr. Willard F. Libby, scientific member of the Atomic Energy Commission, who holds that carbon-14 from bombs does not menace health.

Dr. Pauling predicted serious genetic hazards for each year of bomb testing at the present rate. Carbon-14 and strontium-90 both are radioactive isotopes of those materials. Radioactive strontium-90 has special affinity for bone. The human body has carbon atoms in every fiber and sinew; this radioactive carbon would have special affinity for the whole body.

It must be pointed out, however, that human beings and everything else living have always lived with carbon-14. Cosmic rays react with the nitrogen atoms which constitute the bulk of the atmosphere and convert a very small percentage of them into atoms of carbon-14. These atoms, with a radioactive half life of over 5,000 years, are in the atmosphere, the seas, the ground, even the rocks.

Norwalk, Conn., Fire Company 100 Years Old

The Phoenix Engine Company of Norwalk, Conn., one of the oldest volunteer fire fighting organizations in Connecticut, celebrated its 100th anniversary on December 15. The story of the Phoenix company presents an interesting bit of Norwalk history. Prior to December 2, 1858, the old bucket brigades and two-wheel hose carts were used to fight fires in the First district, then the old city. On that day the community appropriated $2,000 to purchase a fire engine, 500 feet of hose and 22 feet of suction pipe. With this equipment on hand the men decided it was time to organize, and on December 15, 1858, the Phoenix Hose Company was formed.

Minutes of the company's meetings, dating back to the 1870's, are kept in a desk at the Main Street fire headquarters. The desk is the only piece of equipment the company owns. Today's Phoenix officers are Captain Ernest J. Layden; First Lieutenant Donald N. Bredice; Second Lieutenant John H. Ryan; John J. McGarrie, recording secretary; James D. Bredice, financial secretary; Anthony Youhas, treasurer, and Kenneth Taylor, assistant treasurer. John Splan, 84 years old, is the oldest member in point of service.

Most of the present-day Norwalk "vols" limit their fire fighting activity to the larger fires when help is needed by the paid department, under Chief Charles A. Volk.

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FIRE COLLEGES

Fire Department Instructors Conference—Feb. 24-27, Memphis, Tenn. For information contact **Emmett Cox, Western Actuarial Bureau,** P. O. Box 1089, Chicago 90, Ill.

Florida State Fire College—Mar. 2-6—**Units 101,** Tools, Forcible Entry, Breathing Apparatus, Extinguishers; **107,** Arson Detection; **201**—Instructor Training. Mar. 9-13—**Units 102,** Hose and Ladders; **106,** Fire Inspection; **202,** Company Officer Training. Mar. 16-20—**Units 103,** Rescue, Ventilation, Salvage and Overhaul; **105,** Fire Apparatus and Pumps; **204,** Fire Fighting Tactics. Mar. 23-27—**Units 104,** Fire Streams; **206,** Fire Prevention and Protection; **208,** Fire Department Administration. May 19-21—**Liquefied Petroleum Gas.** Aug. 3-7—**Seminar in Arson Investigation and Detection.** Sept. 7-11—**Units 101, 107, 201.** Sept. 14-18—**Units 102, 106, 202.** Sept. 21-25—**Units 103, 105, 204.** Sept. 28-Oct. 2—**Units 104, 206, 208.** For information, contact W. H. Barnett, Superintendent, P. O. Box 785, Ocala, Fla.

Indiana Fire Training Program—Mar. 16-20—**Basic Fire School;** Sept. 8-11—**26th Annual State Fire School;** Oct. 27-29—**Fire Inspectors Course;** Dec. 1-2 — **Fire Management Course.** All courses will be held at Purdue University, Lafayette, Ind. For information, contact Professor Shelby Gallien, Director, Public Safety Institute, Purdue University.

International Arson Investigator's Seminar—Apr. 27-May 1, Memorial Union Building, Purdue University, Lafayette, Ind. For information write Professor Shelby Gallien, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

Morris County, N. J., Fire School—March 3rd, Mine Hill Fire Headquarters. For information, write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

Nebraska State Fire School—May 3-5, Municipal Airport Grounds, Grand Island, Nebr. For information contact Russell D. Salak, Sec., Fire School Committee, P. O. Box 312, Schuyler, Nebr.

North Dakota Fire School—Mar. 23-25, **Officers Training School,** Minot. May 11-13, **Instructors Training School,** Bismarck. Limited number of applications accepted. For information, write to J. K. Eckes, Secretary, North Dakota Firemen's Association, Killdeer, N. D.

Northeastern Pennsylvania Volunteer Firemen's School—June 6-7, Tunkhannock, Pa. For information contact James H. Oakey, Director, P. O. Box 67, Tobyhanna, Pa.

Southern Wisconsin and Northern Illinois Fire School—Sept. 13, Truax Field Air Force Base, Madison, Wis. Secretary, Herman Pfund, New Glarus, Wis.

Washington State Command School for Senior Fire Officers—May 26-29, Yakima, Wash. For information, contact Chief W. K. Moore, Fire Headquarters, Yakima, Wash. □□

Fumes At Plastics Plant Accident Overcome Six

Six men were felled by fumes at a Passaic, N. J., plastics plant on December 4 when a gasket on a reactor blew. The men included four workers, a fireman and a patrolman. They were overcome by vinyl chloride gas sweeping through the second floor of the Eleanora Division of the Pantasote Co. One worker was treated at Passaic General Hospital and released. The patrolman and another worker were kept at the hospital and listed in fair condition.

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COMING EVENTS

Apr. 4-5—Fire Fighters Association of Missouri. Annual meeting, Excelsior Springs, Mo. For information, write John L. Welsch, Secretary-Treasurer, 305 Forest, Harrisonville, Mo.

May 7-9—Florida State Firemen's Association. Annual meeting, Marathon, Fla. For information write R. O. BuShea, Chairman, P. O. Box 200, Marathon Shores, Fla.

May 17—Southern Wisconsin & Northern Illinois Firemen's Association. Spring meeting, place to be announced. Secretary, Herman Pfund, New Glarus, Wis.

May 18-19—Southeastern Association of Fire Chiefs. Annual meeting, Durham, N. C. Secretary-Treasurer, Chief C. W. Wyrick, Fire Headquarters, Greensboro, N. C.

May 21-23—Eastern Association of Fire Chiefs. Annual meeting, Jamestown, N. Y. Secretary, Chief Edwin J. Clark, Box 328, Wayne, Pa.

June 5-6—Indiana Volunteer Firemen's Association. Annual meeting, La Porte, Ind. Secretary, Harry Fries, R. R. 3, Walkerton, Ind.

June 11-13—Montana State Fire Chiefs Association. Annual meeting, Miles City, Mont. Secretary-Treasurer, William S. Hayes, 208 Eklund Building, Great Falls, Mont.

June 22-25—New England Association of Fire Chiefs. Annual meeting, The Wentworth, Portsmouth, N. H. Secretary-Treasurer, John W. O'Hearn, 206 Mt. Auburn Street, Watertown 72, Mass.

Aug. 31-Sept. 3—International Association of Fire Chiefs. Annual meeting, Grand Rapids, Mich. Secretary-Manager, B. Richter Townsend, 232 Madison Avenue, New York, 16, N. Y. □□

7,046 Firemen Trained By Illinois U. Last Year

Last year 7,046 firemen took part in the University of Illinois training programs. Nearly 1,200 different departments—all but about 125 of them composed entirely of volunteers — protect lives and property in Illinois. In the volunteer companies, there is an annual membership turnover of about 25 per cent, making training a continuing necessity.

The University's firemanship training program in 1957-58 included seven specialized training courses; eight regional schools throughout the state; 23 basic training courses in individual communities; 10 fire officer refresher classes; lecture-demonstrations at firemen's association meetings, and the 34th annual Illinois Fire College.

Jackson Progress Report

The City of Jackson, Miss., recently completed a colorful 64-page booklet entitled "Progress Report 1958." It dramatizes all aspects of Jackson's progress and development over the past ten years and highlights many of the city's future plans, including new fire station designs.

A copy may be obtained from the Public Relations Department, P. O. Box 17, Jackson, Miss.

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Compliment your uniform and appearance with all the handsome beauty of the EXCLUSIVE NIELSEN-RIONDA SOLID FLAT BACK BADGE.

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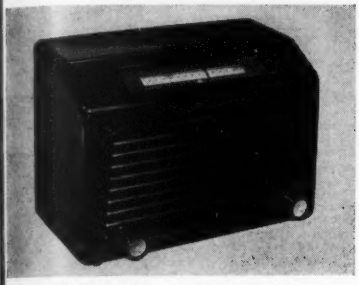

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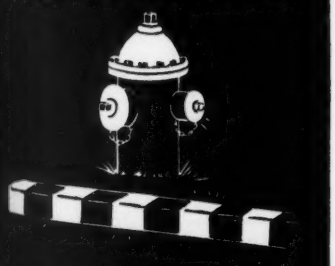

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SPLIT CHANNELS

Continued from page 117

placement plan is considered, all possibilities of receiving financial assistance in this manner be fully explored with the proper civil defense officials. If the original equipment was purchased with matching funds, it is probable there will be little difficulty in obtaining assistance.

The benefits expected from the recent FCC orders most likely will result in more efficient radio operations for some time to come. Temporary hardships to existing radio systems may be expected. In the long run, the advantages to be gained from the new technical standards should far outweigh any short-term disadvantages and improved fire service communications will result. □□

Acknowledgment: In addition to the manufacturers whose photographs and diagram are credited in the text, the editors wish to acknowledge the technical asistance of the Radio Corporation of America and Bendix Radio, Division of Bendix Aviation Corporation, in the preparation of this material.

Explosion Kills Pilot Trapped in Plane

A fuel explosion killed a crop-duster pilot last summer while townspeople of Unadilla, Ga., tried to free him from the wreckage of his light plane. James Snow, a combat flying veteran from Albany, Ga., crashed in a cemetery following engine failure shortly after take-off.

Snow called for help and three men responded. Working feverishly under the pilot's direction, they had him halfway out of the cockpit when gasoline-fed flames drove them back. A few seconds later came the explosion.

Our Readers Write Us

Not Portland City Limits

To the Editor:

We are concerned with the opening sentence of the article, "Fireworks Warehouse Blasts Wide Residential Area," in the October issue of FIRE ENGINEERING: "A fireworks warehouse, located, of all places, in a residential area of Portland, Ore." The second paragraph explains that the incident was two blocks outside the City of Portland, but the above sentence certainly is not very complimentary to the City of Portland.

Believe me, this was really an explosion, and any such hazard should be far removed from any residential area.

Chief H. E. Simpson
Bureau of Fire
Portland, Ore.

Note: The sentence in question is unfortunately worded. No reflection is intended on the Portland Fire Department and the editors regret this inadvertent construction.

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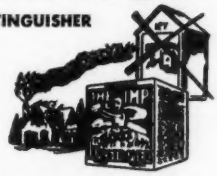

Save rushing to chimney fires—avoid slippery roofs by using IMP Chimney Fire Extinguisher. Just throw a 65¢ package "as is" on the hottest part of the fire in the stove, furnace or fireplace. The chimney fire will be out in jigtime without water or chemical damage. Recommended by many chiefs who carry IMP in their cars. ALSO —LIQUID IMP for *oil fired units*, is as much a fire preventative as pkg. IMP. Saves oil, money, increases heat, prevents sludge, reduces carbon deposits and is safe. You know what a fire hazard sludge is. Use LIQUID IMP in your own burners. 3½ oz. enough for 90 gals. kerosene or 55 gals. No. 2 fuel oil; 16 oz. enough for 5 times above quantity; 1 gal. enough for 1600 gals. #2 fuel.

A fire prevented is worth more than a dozen extinguished!

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Add package and liquid IMP to your line.
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SELECT-O-STREAM MYSTERY FOG NOZZLE

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PATENT PENDING

Exclusive *Dial-A-Tip* feature gives a variable straight stream equivalent to straight tips from 7/8" to 1 1/8".

- First hand line combination fog nozzle that will give a full Underwriters' stream (250 G.P.M. at 100 p.s.i.) in a straight stream position. Furthermore, this nozzle will produce a straight stream as small as that of a booster nozzle.
- Rated at 275 G.P.M. at 30° fog, 100 p.s.i. Also has 60° and 90° fog positions.
- Base of playpipe available in solid or swivel construction. Shut-off handle and stream indicator always on top.
- Scientifically balanced with bulk of weight forward — counterbalances weight of hose for easier handling.
- Lightweight—entire unit weighs only 15¼ lbs. Ball type shut-off is an integral part of playpipe and is so designed that straight tips may be used if desired, or a 1½" line may be attached directly to the end of shut-off.

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FIRE ENGINEERING

FEBRUARY, 1959

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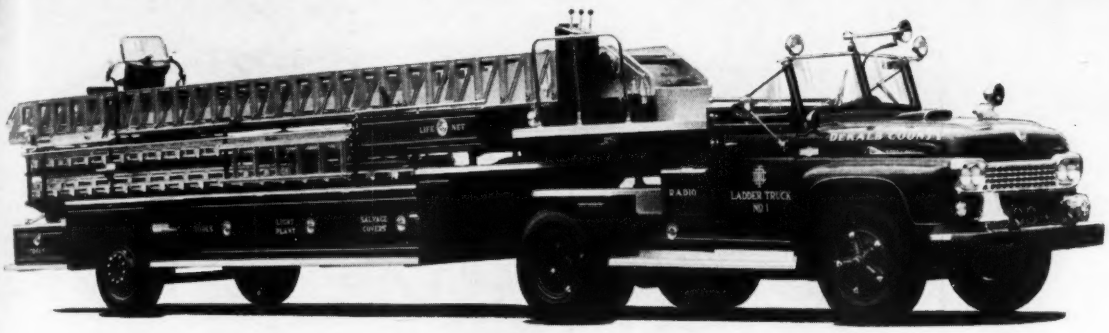

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